CITY OF CARDIFF.

ANNUAL REPORT

FOR 1922

OF THE

MEDICAL OFFICER OF HEALTH.

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CITY OF CARDIFF.

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CITY OF CARDIFF.

CITY HALL,

CARDIFF,

August, 1923.

To the Right Honourable The Lord Mayor, Aldermen and Members of the City Council of Cardiff.

My Lord Mayor and Gentlemen,

I have the honour to submit the Annual Report for the year 1922. The Report again follows the abbreviated form prescribed by the Welsh Board of Health last year, although some of the tables formerly appearing in Dr. Walford's Reports have been restored, as they are frequently required for reference. Pressure of work in the Department, arising from the boundary extension and the small-pox precautions in 1923, has caused delay in the issue of this year's Report.

BOUNDARY EXTENSION (Population, Etc.).—On 9th November the City was enlarged in terms of the Ministry of Health Provisional Order Confirmation (Cardiff Extension) Act, 1922. The population estimated by the Registrar General at 30th June, 1922, was 203,700 for the old city, and 223,830 for the extended city, so that the boundary extension brought in an additional population of 20,130. The area of the City before and after the extension may be shewn as follows :—

	Before Extension.	After Extension.	Increase.
Including inland water, foreshore and Flatholm ...	8,095	13,628	5,533
Excluding foreshore and Flatholm	6,437	11,970	5,533

The area of the City is therefore practically doubled, affording new land much needed for the erection of houses according to modern ideas of town-planning.

The increase in rateable value, as the result of extension, is as follows :—

Before Extension (31st Oct., 1922).	After Extension (as at 31st Oct., 1922).	Increase.
£1,452,261	£1,578,684	£126,423

The sum represented by a penny rate has therefore increased from £6,051 to £6,578.

Accompanying the extension, a rearrangement of the city wards took place, the number of wards being increased from ten to thirteen, and the ward boundaries altered in every case. Such alterations have the disadvantage, from the public health standpoint, that the continuity of the ward records used as indices of health is lost. Continuous records are valuable for comparing the health of the people residing under varying sanitary conditions, and for tracing throughout successive years any improvement in health occurring contemporaneously with the betterment of these sanitary conditions. From 1923 onward the statistics will be compiled according to the new ward distribution, and will not be comparable with those of the past. In this Report they are given for the old city and the old wards, certain statistics of the area added on 9th November being shown in separate tables.

It was hoped that, for the purpose of public health records, the old area and population might have been retained until the end of the year, but negotiations with the Registrar General, aiming at such an arrangement, were unsuccessful. The Registrar General's rates for Cardiff in 1922 do not, therefore, apply to a uniform area and population throughout the year, and the annual rates for the City as before extension given in this Report will not tally with those published from his office.

The extension, besides increasing the amount of work to be covered, has brought with it new problems of sanitary administration, particularly in relation to the semi-rural character of part of the area included and to the time occupied in travelling by the staff. Particular reference may be made here to the inclusion of a considerable number of dairy farms in the added area. The old City contained only 4 dairy farms and cowsheds, whereas the number is now 33, an increase of 29. Practically at the same time as the City Extension, the Milk and Dairies (Amendment) Act, 1922, came into force, increasing the powers and duties of Local Authorities in relation to the sale and distribution of milk, and, to a corresponding extent, the responsibilities of the officers of this Department. Reorganisation of the Department to meet these problems was not completed in 1922 and is therefore not dealt with here.

CENSUS, 1921.—While this Annual Report is in course of preparation, the Registrar General has published the County Part for Glamorgan of the Report on the Census of 1921. A preliminary note on the statistics relating to Cardiff is included in Appendix I. of this Report, the tables concerned with housing being dealt with in considerable detail. The Census figures, of course, apply only to the City as before extension, but so far as the housing problem of Cardiff is concerned, the absence of information as to the added area is of comparatively little importance.

For the first time accurate data are available for arriving at some estimate of the number of houses required. Various estimates have been made, the most recent being that contained in an article by Councillor Sanders contributed to a special Housing Supplement of the "Western Mail," in which the figure was put at 2,000.

Any estimate must depend partly on the point of view from which the problem is approached and partly on the effective demand for houses, which again depends on the economic circumstances of the prospective tenants and their desire to vacate their present dwellings. Some measure of this demand may be obtained from the waiting lists for Corporation houses in the hands of the City Treasurer and Controller, but fallacies may arise on the one hand from applications which are not justified on grounds of need, and on the other from omission to apply on the part of persons who, knowing the magnitude of the waiting list, see no prospect of being accommodated.

Turning now to the Census figures, we observe first of all that the excess of families over structurally separate dwellings occupied (Appendix I., Table I.) in the middle of 1921, was 10,569. On the sound public health argument that multiple tenancy of houses is undesirable, this may be taken as the extent to which Cardiff fell short of the ideal so far as the number of houses is concerned; with the reservation that a certain number of lodgers are included for statistical purposes as "families." But multiple tenancy in Cardiff, where there is a high proportion of relatively large houses, is not a new development, although the excess of families over houses has increased by 4,149 since 1911. Its entire abolition must be a gradual process. It is, however, a matter of urgency that its increase should be remedied as soon as possible.

When the "units of occupation" (or tenements) of various sizes are compared with the separate houses of the same size (Appendix I., Table IV.) it is seen that the number of the former of five rooms or less exceeds the corresponding group of the latter by 16,768, the excess being

absorbed, as multiple tenancies, in a surplus of 7,924 larger houses. The difference between these two figures, or 8,844, may be taken as an estimate of the housing requirement, the fallacy due to lodgers being practically eliminated in this calculation. When it is remembered that there is a fairly large number of houses of 8 and 9 rooms not required for single tenancy, it would appear that some part of the deficiency of smaller houses might be met by remodelling the surplus of large houses, so as to convert them into structurally separate houses. In any case, this table suggests that the demand is for a smaller type of house, although the large number of small tenements occupied may be a matter of necessity rather than of election.

Turning again to the comparison of Cardiff's present and past positions in comparison with all County Boroughs in England and Wales (Appendix I., Table VII.) we find that some 32,000 rooms were required in 1921 to maintain our relative position of 1911. If the requirement is taken to be entirely for houses of 4 or 5 apartments, this represents about 7,000 houses, but if it be assumed that there is a need of about 2,000 houses of larger size, then the shortage of smaller houses may be put at 5,000.

Again, on the basis of the average number of families occupying each house in 1921, as compared with 1911 (Appendix I., Table I.), 3,080 houses were required to maintain the standard of the earlier period.

Taken together, the inference appears justified that Cardiff was in urgent need of 3,000 to 5,000 houses in 1921, and that the number which ought to be provided between 1921 and 1931 should not be less than 6,000, and, if possible, should be nearer 10,000.

BIRTHS.—The number of births registered during the year and belonging to Cardiff (old city) was 4,401. Of these, 142 were illegitimate. After 9th November, there were 76 births in the added area, of which 4 were illegitimate. The annual birth-rates for the city unextended and for the added area were therefore 21·6 and 26·5 per 1,000 respectively. With the exception of the years affected by the war, 1917, 1918 and 1919, this is the lowest birth-rate recorded for the old city.

DEATHS.—After allowing for inward and outward transfers, the number of deaths in the old city was 2,704, giving a crude death-rate of 13·2 per 1,000, which is higher than the rates for the previous three years, but below that of any earlier year. The increase is accounted for by the epidemic of influenza which occurred early in the year, 758 deaths being due to influenza and other respiratory diseases, as compared with 429 in 1921, an increase of 329.

From 9th November, 28 deaths occurred in the added area, giving an annual death-rate of 9·8 per 1,000.

When the causes of death, shown in Table II. of Appendix IV., are examined, the points of outstanding importance are that 309 of the deaths were attributable to various forms of tuberculosis, 208 to cancer, 278 to organic disease of the heart, and 758 to influenza and diseases of the respiratory system. When to these are added 235 deaths included in the groups of "defined" and "ill-defined" causes, which appear to have been the result of cardiovascular disease, a total of 1,788 are found to be due to tuberculosis, cancer and diseases of the heart, bloodvessels or lungs, a proportion of 66 per cent., or approximately two-thirds of all deaths. While many of the cardiac and respiratory diseases mentioned in the returns are the inevitable accompaniment of old age, preventive medicine has so far failed to delay their onset or to prevent the occurrence of cancer. The increasing importance of these causes of death is one reason for the new orientation of the practice of preventive medicine which is gradually taking place.

INFECTIOUS DISEASES.—The decline recorded in 1921 in the number of cases of diseases ordinarily treated in isolation hospitals continued during 1922. The movement may be shown as follows :—

	Diphtheria.	Scarlet Fever.	Total.
1919	257	2,166	2,423
1920 ... ..., ...	366	1,351	1,717
1921	317	683	1,000
1922	247	363	610

This low prevalence has been experienced in most other parts of the country, and is, no doubt, partly responsible for recent expressions of the view that the maintenance of isolation hospitals for the segregation of patients suffering from these diseases is unnecessary. The fact is that we are at present at the trough of one of the periodic waves of scarlet fever and diphtheria (which run more or less concurrently) and it is certain that we shall experience renewed prevalence before our housing conditions have ceased to make the isolation of patients a matter of urgency. The increase in 1922 in the number of deaths from whooping cough (42, as against 11 in 1921) and measles (14, compared with 1 in 1921), indicates that these diseases, which behave similarly to scarlet fever and diphtheria in this respect, are already showing an upward tendency.

Reference is made in the body of the Report to an enquiry made as to the prevalence of mosquitoes in Cardiff and the measures necessary to abate this nuisance; and also to the influenza epidemic of 1922.

The prevention of the large and important group of air-borne infections to which influenza belongs, and which also includes measles, whooping cough and the great majority of cases of scarlet fever and diphtheria, still remains an unsolved problem. Only in the case of small-pox have we a specific, and therefore a reliable, preventative in the form of vaccination. The suggestions thrown out and broadcasted at the onset of an epidemic of influenza are of little real value. When they are anything more than ordinary commonsense precautions, which ought to be a matter of daily observance by everybody, they are impracticable or actually misleading. Epidemics of these diseases find us powerless to stay their course or to exert more than palliative measures against them. Even if the methods of specific prevention already in vogue for influenza and diphtheria are perfected and extended to the other infections, their universal use at the appropriate time—*i.e.* when the diseases are *not* epidemic—would seem to be impracticable in this country, where such a strong antipathy to vaccination exists.

TUBERCULOSIS.—The number of new cases of tuberculosis coming to the knowledge of the Department has materially increased. In 1922 the number of patients notified as suffering from the pulmonary form was 387, as compared with 304 in 1921, while the corresponding figures for non-pulmonary tuberculosis were 96 and 54, a total increase for all forms from 358 in 1921 to 483 in 1922, *i.e.* 125. This increase is mainly, if not entirely, artificial, and is the result of a circular letter to practitioners asking for a more strict observance of the obligation to notify tuberculosis. The effect of the circular is shown in a decline from 29·2 to 16·1 in the percentage of unnotified cases among those dying during the year.

There has been, however, a slight but real increase during the year in the death-rate from pulmonary tuberculosis, from 1·20 per thousand in 1921 to 1·27 per thousand in 1922. Virtually, with the exception of a period of heavy mortality during the war years, the death-rate from pulmonary tuberculosis has been stationary in Cardiff since before the inception of the Tuberculosis Schemes introduced by the Insurance Acts. No one who has been intimately associated with an organisation for dealing with tuberculosis could suggest for one moment that any part of the work embarked upon should be undone, but it is a matter for serious thought whether any fresh expenditure should not be devoted to further research into the causes of, and remedies for, the disease, rather than to an extension of the existing services. Particularly, further enquiry is required into the influence of indigence and the consumption of certain types of foodstuffs on the liability of individuals to contract tuberculosis. It is worthy of note, too, that the mortality from pulmonary tuberculosis remains high in Cardiff, where slums, in the commonly accepted sense of the term, are practically non-existent, but where overcrowding is almost as rife as in any other town.

VENEREAL DISEASES.—The returns submitted by the Cardiff Royal Infirmary and the Royal Hamadryad Seamen's Hospital, recording the work done at their clinics during 1922, show that a decline has taken place in the number of cases treated at both institutions, although the number of attendances at the out-patient clinic and the number of bed-days have actually increased at the Hamadryad Hospital. The decline in new cases is briefly shown as follows :—

	1921.	1922.	Decline.
Royal Infirmary ...	1,148	849	299
Seamen's Hospital ...	868	788	80
Total	2,016	1,637	379

This apparent fall in the incidence of venereal diseases is common to the whole country, and is variously attributed to the influence of anti-venereal disease propaganda, to the beneficent influence of the clinics in reducing the number of infective persons, and to unemployment and poverty acting as a financial deterrent to exposure. In any case, the occurrence of so much venereal disease remains a very serious problem, when its grave ultimate consequences to the individual and to the community are remembered, and when the incidence of syphilis alone is compared with the other chronic disease which gives the community so much concern, viz., tuberculosis. Syphilis occurred alone or in combination with other diseases in 801 instances, as against 483 new cases of tuberculosis during the year.

The national controversy which has raged around the methods advocated for preventing venereal diseases, exemplified by the divergent views put forward by the National Council for Combating Venereal Diseases and the Society for the Prevention of Venereal Diseases, culminated in the appointment of a Committee by the Minister of Health to investigate the problem from every point of view. Your Medical Officer was invited to submit views on the subject through the National Council. The Committee, which sat under the Chairmanship of Lord Trevethin, has issued a Report in 1923, which it is hoped will bring the controversy to an end, and revitalise the national movement for the control of venereal diseases. Probably a combination of sound, if simple, instruction in biology at school, and adequate facilities for healthy recreation of the adolescent of both sexes, will reduce the incidence among the youth of the rising generation ; but it is difficult to understand the prejudice which undoubtedly exists in some quarters against the enforcement of continuous treatment and the punishment for infecting others of adults, many of whom habitually expose themselves and others to infection, and cannot be influenced by any appeal to chastity. The community's concern is that wives and children, existing or prospective, innocently contract the disease and become, as a result, a burden on the social and medical services.

MATERNITY AND CHILD WELFARE.—The work of this Section of the Department has continued to expand within the limits of the present financial restrictions. As it is largely educational in character, its influence over the comparatively short period of its existence is not easy to measure, but anyone who has watched the attention paid by the mothers to the advice and instruction given by the medical and nursing staff, under Dr. Adams' able supervision, can have no doubt as to their value. It is significant that during the last ten years the infant mortality has fallen with slight intermissions, and that this rate for 1922, viz., 81 deaths under one year per 1,000 births, is the lowest on record, in spite of a fairly heavy mortality from influenza and other respiratory diseases in the early months of the year. It should be recognised, of course, that the cold summer was conducive to a low diarrhœal death-rate, and so had its share in keeping down the infant mortality.

In taking stock of this question of infant deaths, it would be unwise to adopt too sanguine a view on the basis of recent years' experience. We have not had in this city—with the exception of the recent brief pandemic of influenza—any of the infectious diseases in grave epidemic form. Concurrent epidemics of severe scarlet fever, diphtheria, and measles or whooping cough, may not improbably recur, and may materially affect the mortality of children under one year of age. It is not by any means certain that even infantile diarrhœa is not an epidemic disease, subject to waves of increased virulence over periods of years, or that it is entirely dependent on fluctuations of temperature and on maternal care. In the case of this disease, however, confidence may be derived from our experience of cholera and the enteric fevers, diseases similar in type to infantile diarrhœa, which have been virtually abolished by methods comparable to those employed in the campaign against diarrhœa.

There still remains a heavy mortality among infants under the age of 4 weeks. In 1922, 36·4 per cent. of the deaths under one year belonged to this period of life, a proportion which is fairly constant, being 36·5 in 1919, 41·7 in 1920, and 40·2 in 1921. It is the mortality at this age period which is least affected by measures aimed at improving the post-natal environment. Research into the factors influencing antenatal life is required—such an enquiry, incidentally, is being carried out at the Cardiff Royal Infirmary by Dr. Gilbert Strachan under the *ægis* of the Medical Research Council—but much may be done by adequate care of mothers before and at confinement. This was the motive which actuated the Committee in contracting for beds at the Maternity Hospital and in setting up antenatal clinics, but the dissociation from one another of the administration of these two agencies is a factor militating against their success.

Other factors in the improvement of the health of children and the reduction of infant mortality, outside the province of a Health Department, must not be forgotten. Infant mortality has fallen during a period of practically continuous decline of the birth-rate. There can be no question that reasonable spacing of births in families is conducive to greater fitness for parturition on the part of mothers, and to better rearing of the children already born, whatever social disadvantages may be thought to be associated with the small family.

MILK.—On 1st September, 1922, the Milk and Dairies (Amendment) Act, 1922, came into force, closely followed by the Milk (Special Designations) Order, 1922. The passage of this Act, which still further postpones the application of the Milk and Dairies (Consolidation) Act, 1915, until 1st September, 1925, was unsuccessfully opposed by Cardiff in conjunction with other Municipal Corporations, as mentioned in the Report for 1921.

While the amending Act is a poor substitute for the original, it contains certain sections, particularly that relating to the registration of milkvendors, which may prove useful if the meaning, at law, of some of its phraseology will permit of a liberal interpretation; but it seems clear that attention should be devoted for the present to a genuine effort to promote the purposes of the Milk (Special Designations) Orders, which lay down the conditions under which graded milk may be sold.

It is of interest in this connection to consider the state of cleanliness (in the bacteriological sense) of the milk sold in Cardiff. For many years, routine sampling of milk for bacteriological examination has been carried out, and it may be interesting in some future Report to compare the past results with those following upon the present very vigorous campaign for a cleaner milk supply. For the present, however, attention may be confined to the state of milk sold in, or arriving at, Cardiff during 1922, in relation to the standards now adopted for Grade A. Milk. The latter quality of milk, among other conditions, may not contain more than 200,000 bacteria (grown at 37°C) per cubic centimetre, nor the *bacillus coli* in one hundredth of a cubic centimetre. The *bacillus coli* is usually associated with animal excrement, and is assumed to find its way into milk from contamination with cows' dung. Using these standards as a test of the quality of the milks sampled from month to month in 1922, the results may be shown in tabular form as follows :—

	No. of Samples examined	No. containing less than 200,000 per c.c.	No. with B. Coli absent in $\frac{1}{100}$ c.c.	No. attained Grade A. standard by both tests.	Percentage attained Grade A. standard
January ...	15	12	8	7	
February ...	17	17	14	14	
March	18	17	13	13	68·75
April	12	11	9	9	
May	18	12	13	12	
June	14	3	5	2	
July	16	12	...	...	11·36
August ...	14	5	4	3	
September ...	14	13	9	9	
October ...	16	13	10	10	
November ...	20	16	17	14	66·13
December ...	12	10	9	8	
Totals ...	186	141	111	101	54· 3

At first sight it would appear that more than half the milks sampled reached the standard of Grade A. milk, but it must be remembered that every sample of the latter *throughout the whole year* must maintain this level. The real test, therefore, is to be found in the results of sampling during the hot months of the year, and it will be seen that only eleven per cent. of the milks sampled in June, July and August were up to standard. If each individual supply had been examined monthly throughout the year, it is certain that a still smaller percentage would have uniformly passed the test.

When the above 186 samples of milk are classified in three groups—(*a*) Sold by producer retailers, (*b*) taken from churns arriving at Cardiff station from producers, and (*c*) handled by retailers who are not producers, a progressive deterioration in the order mentioned can be observed. This is partly due to the time taken in transit of railway milk and partly to the greater opportunities for contamination afforded by repeated handling. But it cannot be too strongly emphasised that milk properly handled by both producer and retailer can easily reach the relatively low standard of Grade A. milk, and its frequent failure to do so is an indication of the unsatisfactory methods at present employed by both.

As already mentioned, the number of milk farms in Cardiff has been increased by the boundary extension, but our local administrative problem remains chiefly with the retailer. The following classification of milkvendors in Cardiff is therefore of interest* :—

(1) Selling milk from shops, with or without rounds	223
(2) Selling milk from dwelling-houses, with or without rounds ...	83
(3) Selling milk by rounds only	63
(4) Selling milk from farms within the city boundary	8
(5) Selling milk by retail from farms outwith the city boundary ...	52
Total	429
Vendors selling 6 gallons or less per day—	
(*a*) included in (1) above	170
(*b*) ,, ,, (2) ,, ...	4
(*c*) ,, ,, (3) ,, ...	6
Total	180

Total number of gallons sold per day by all vendors ... 13,000 (approximately).

The existence of so many retailers handling trifling quantities of milk is necessarily hindering progress toward a better quality of milk. These are mainly small shopkeepers who sell milk, not as their staple trade, but for the convenience of customers, and in order to attract custom for other goods. Their premises are, almost without exception, unsuitable for the sale of milk. If the service which they supply cannot be provided otherwise, the solution would appear to lie in the direction of at least abolishing all handling and exposure of milk on their premises, a result which could be attained by the sale in such premises only of milk in sealed bottles, bottled in proper premises by some dealer whose business is confined mainly to the handling of milk.

While the cleanliness and construction of railway trucks for the transport of milk are of secondary importance if suitable churns are used, it is unfortunate that the Railway Companies do not appear to take a very serious view of their responsibilities in this connection. More important still is the practice of transferring milk from churn to churn on station premises under conditions favouring gross bacteriological contamination. The provision of a separate building for this purpose is recognised to be a matter of urgent importance, but whether this is the function of the Railway Company or the dealers acting jointly, or of the Local Authority, is a moot point.

The sampling of milks for tubercle bacilli is dealt with under the headings " Tuberculosis " and " Laboratory Work."

SANITARY INSPECTION.—A full statement of this branch of the work of the Department is included in the Report. The public have become so accustomed to this, the oldest branch of public health administration, that there is danger of its value failing to be recognised. It is not spectacular, but the returns are a record of a great deal of work quietly done, forming the foundation of the whole superstructure of modern preventive medicine. In this connection, reference may be made to a report on " Housing—Unhealthy Areas," an extract from which is included in Appendix II.

* This information applies to the extended City of Cardiff in May, 1923.

PROPAGANDA.—"Health Week" was held with considerable success in Cardiff during the week ended 14th October, 1922. Public Lectures were given by Dr. Stenhouse Williams, of the Dairy Research Institute, Reading, Prof. Lyle Cummins, and Dr. Parry Morgan. During the same week a vigorous anti-venereal diseases campaign was carried on by Mr. Elliott, sent by the National Council for Combating Venereal Diseases at the instance and expense of the Local Branch. Essays on subjects relating to health were set for school children, and the clergy were asked to make such reference from their pulpits on health matters as they thought desirable. The press, as usual, gave satisfactory prominence to the movement in their columns.

As progress in health matters is becoming more and more dependent on the co-operation of the individual members of the community, the organisation of propaganda is a question of increasing importance. Its success depends partly on elements of surprise and variety, in order to catch and hold the fleeting interest of those who are not naturally disposed to learn. Apart from this, good results may be attained by supplying lecturers to various societies which organise series of lectures, and a useful step in Cardiff might be the formation of an influential Committee to interest themselves in propaganda, and to draw up a panel of lecturers whose services would be available for any body desiring them.

The natural, but unreasonable, prejudice against vaccination which is so prevalent, indicates the need, more especially, for widespread diffusion of knowledge of the processes by which the human organism protects itself against disease. There is no possibility of extending the application of artificially induced immunity to the prevention of other diseases besides small-pox, until the community accepts the procedure from conviction based on a clear understanding of the processes of defence it awakens.

POVERTY AND UNEMPLOYMENT.—The effect of the present widespread and prolonged unemployment is of grave concern in relation to health, although its effects are not yet demonstrable. In the Annual Report for 1922 on the Medical Inspection and Treatment of School Children, it was shown that the trade slump had not so far been reflected in the nutrition of the children. The general death-rate, if allowance is made for about 300 deaths attributable to the influenza epidemic, was low, and the infant mortality was the lowest on record. Theoretically, an increase of deaths from suicide might have been expected, but while the number of such deaths was high (20) in 1921, the number in 1922 (10) was below the average for the last 10 years (12·2). Only, perhaps, in the slightly increased tuberculosis death-rate (probably the most delicate index of social conditions) may some effect of poverty be traced, but here again other factors, such as the influenza epidemic, may have played a part.

It has, however, been abundantly demonstrated, both in this country and abroad, that the health of a community is definitely correlated with its financial state, and that it fluctuates with the rise and fall of "real wages." Although this effect may be delayed by the various existing organisations for relief, there can be little doubt that prolongation of unemployment and bare subsistence wages will ultimately have a more deleterious effect on health than any other factor, even including housing. Indeed, the importance from the health standpoint of housing schemes at the present time rests perhaps as much on the diffusion of wages as upon the provision of houses.

I have the honour to be,

My Lord Mayor and Gentlemen,

Your obedient Servant,

RALPH M. F. PICKEN,
Medical Officer of Health.

Section 1.

GENERAL STATISTICS.

Area—Including inland water, foreshore and Flatholm...	8,095 acres.
Excluding foreshore and Flatholm	6,437* ,,
Population (as estimated by Registrar General) ...	203,700
Number of Structurally Separate Inhabited Houses (estimated)	32,666
Average Number of Persons per house	6·23
Rateable Value (October, 1922)	£1,452,261
Sum represented by a Penny Rate	£6,051

* The figure for this area, given in last year's Report as 6,489 acres, was erroneous. The latter figure includes the area of Flatholm above the high water line, and is the area of Cardiff as recorded in the Census Report.

Section 2.

EXTRACTS FROM VITAL STATISTICS OF THE YEAR.

		Total	M.	F.	
Births	Legitimate ...	4,259	2,150	2,109	Birth-rate : 21·6 per 1,000.
	Illegitimate...	142	77	65	
		4401			
Deaths		2,704	1,484	1,220	Death-rate : 13·2 per 1,000.

Number of women dying in, or in consequence of, childbirth :—

From Sepsis	12
From other causes	15
Total ...	27

Deaths of infants under one year of age per 1,000 births :—

Legitimate ... 79. Illegitimate ... 169. Total ... 81.

Deaths from Measles (all ages)	14
,, ,, Whooping Cough (all ages)	42
,, ,, Diarrhœa (under 1 year of age)	22
,, ,, ,, (over 1 and under 2 years of age)	4

Section 3.

NOTIFIABLE DISEASES.

TABLE I.—NOTIFICATIONS, ADMISSIONS TO HOSPITAL AND DEATHS.

Disease.	Cases Notified	Cases admitted to Isolation Hospital	Deaths
Diphtheria	247	181	15
Scarlet Fever...	363	313	2
Enteric Fever (including Paratyphoid)	8	5	2
Puerperal Fever	20	...	12
Pneumonia	226*	...	255*
Erysipelas	46	...	...
Continued Fever	...	...	...
Encephalitis Lethargica	1	...	1
Poliomyelitis	...	...	...
Polio-encephalitis	...	...	...
Cerebro-spinal Meningitis	2	2	1
Malaria	15	...	...

TABLE II.—AGE-DISTRIBUTION OF THE CASES OF, AND DEATHS FROM, DIPHTHERIA AND SCARLET FEVER, AND THE FATALITY IN EACH AGE GROUP.

Ages	No. of Cases Notified	No. of Deaths	Fatality per cent.
DIPHTHERIA :—			
0— 1 year	1	...	...
1— 5 years	68	8	11·7
5—15 ,, ...	137	7	5·1
15—25 ,, ...	24	...	...
25—65 ,, ...	16	...	...
65 and over	1	...	...
All ages	247	15	6·0
SCARLET FEVER :—			
0— 1 year	3	...	...
1— 5 years	84	...	...
5—15 ,, ...	221	1	0·4
15—25 ,, ...	37	...	...
25—65 ,, ...	18	1	5·5
65 and over	...	...	...
All ages	363	2	0·5

The zymotic death-rate, *i.e.*, the death-rate from the seven principal infectious diseases, viz., smallpox, measles, scarlet fever, whooping cough, diphtheria, enteric fever and diarrhœa, was 0·50 per 1,000 persons living, as compared with 0·92 for 1921, and with 1·16, the average for the ten years 1912–1921.

SMALLPOX.—No cases of smallpox occurred in the urban area during the year, but the continuous spread of this disease throughout the Country made it evident that a large commercial

* Only such cases of pneumonia as fall into the category "Acute Primary" and "Influenzal" are notifiable. In the last column deaths from all forms of the disease are included.

centre like Cardiff could not long escape. The state of vaccination of the population is therefore important. So far as infants are concerned, definite information is available and is shown by the following statement for 1922, kindly supplied by the Vaccination Officer :—

Successfully Vaccinated	Insusceptible	Postponed	Certificates, etc.	Died Unvaccinated	Unaccounted for, etc.
2,671	5	184	1,900	148	196

The decline of infant vaccination and the increased use made of the existing facilities for exemption are shown by a comparison of the returns for those years since 1901 for which they are available :

	Percentage of Infants not returned as vaccinated	Percentage of Certificates of Exemption
Nine years in the period 1901 and 1910 ...	33·5	4·3
Eight years ,, ,, 1911 and 1920 ...	54·2	24·1
1921	42·5	29·5
1922	47·5	37·2

The high percentage unvaccinated in the second period above was partly due to reduced activity of the Vaccination Authority during the war years. The percentages in the last column, however, shew a steady and rapid increase of deliberate avoidance of vaccination.

That the unvaccinated population is not materially affected by vaccination after the statutory period, is shown by the fact that 40 per cent. of the school children examined during the year had not been vaccinated. The decrease of infant vaccination is further illustrated by the fact that, while 38·5 per cent. of children over 8 years were unvaccinated, the percentage was as high as 44·1 among the younger children classified as entrants, the majority of whom were 5 or 6 years of age.

PNEUMONIA.—A large increase in the number of notifications of pneumonia is recorded, 226 as against 91 in 1921. This, of course, was due to the epidemic of influenza dealt with in another section of this Report. There can be no doubt that, even in this year, when influenza acted as a reminder to the general practitioners of their statutory obligations, notification was far from complete. This fact is brought out by the following statement :—

Number of cases notified by each Practitioner.	Number of Practitioners
Less than 5	17
Over 5 and under 10	5
,, 10 ,, ,, 20	3
,, 20 ,, ,, 30	3
,, 30 ,, ,, 40	1
Total	29

All the 226 cases were notified by only 29 practitioners, and some of these sent in far more notifications than could be accounted for by the relative size of their practices. The inference is that the others notified only a proportion of the cases they attended, while the majority of the doctors in Cardiff notified no cases at all. The reason, no doubt, is to be found in the difficulty of interpreting

the description "Acute Primary Pneumonia" used in the Regulations, a description which is not recognised in any scientific nomenclature of diseases.

MALARIA.—The increase of notifications of malaria, from 7 in 1921 to 15 in 1922, is due to stricter observance of the line to be drawn between port and urban cases, and is of no real significance. In every case the infection was contracted abroad. Circumstances occurred, however, during the summer of 1922 which gave rise to an enquiry into the prevalence of mosquitoes in and around Cardiff. These are set out in the following Report submitted to the Health Committee :—

"During the heat wave in the latter part of May and the early weeks of June, considerable annoyance was caused in Canton district by mosquitoes of the variety commonly known as gnats. One stage in the life-history of mosquitoes—the larval stage—is spent in stagnant water, and, in this instance, the water-butts which formed their breeding places were dealt with, and the nuisance has materially abated.

"These circumstances led to an investigation into the prevalence of mosquito larvæ in stagnant water within and around the City, and a survey of Cardiff is in progress with a view to identifying the types of mosquito in various districts. Larvæ are being collected and submitted to Dr. Simpson of the Welsh National Museum, who has kindly consented to examine and identify them. At present it may be stated broadly that the great majority of the larvæ found, so far, belong to the gnat variety (*culex*) but, in two instances, larvæ of the malaria-carrying mosquito (*anopheles*) have been discovered. The significance of this discovery is obvious, when the presence in the community of a large number of malarial ex-service men is taken into consideration.

"Apart from malaria, mosquito-bites are a source of much discomfort and loss of sleep, and not infrequently they are followed by fatal blood poisoning. It is therefore important to deal with their breeding places. The commonest of these are the water-butts, pools and wells from which allotment-holders water their plots.

"I have been in communication with the Hon. Director, Hayling Island Mosquito Control, as to larvicides which are efficient without being injurious to plant life ; and experiments with the same end in view are being carried on by Inspectors of the Department. The General Secretary of the Cardiff and District Allotment Federation, Ltd. has readily agreed to circulate to his members any recommendations which may be made for preventing mosquitoes from breeding on allotments."

The measures referred to were set out in pamphlet form as follows :—

CIRCULAR TO ALLOTMENT HOLDERS.

PUBLIC HEALTH DEPARTMENT,
CITY HALL, CARDIFF,
7th July, 1922.

MOSQUITOES.

The common gnat, which is a mosquito known to scientists as *culex*, is a nuisance, and often a danger to health. Another mosquito, less common in this country and known as *anopheles*, is even a greater danger as it carries the parasite of malaria. *Both these types of mosquito are breeding in and around Cardiff.*

Their favourite haunts are water-butts, stagnant pools and wells on allotments, where their larvæ (or grubs) develop. Mosquitoes cannot survive unless they have such water to breed in. The larvæ vary in size from about $\frac{1}{8}$ to $\frac{3}{8}$ of an inch, and can be seen rising regularly to the surface to breathe, where as a rule, they hang head downwards. The following measures will prevent their breeding without making the water harmful to plants :—

(1) Water-butts may be covered with fine-meshed wire gauze, or muslin, or other similar material through which mosquitoes cannot gain entry to lay their eggs on the water. This method is satisfactory only if the cover fits closely and is replaced carefully after water is introduced or withdrawn.

(2) A disinfectant containing about 15 per cent. of cresol* added in proportion of three drops to the gallon of water will kill larvæ in a few hours, without making the water harmful to plants. The strength of the disinfectant (which is about 1 in 27,000) must be maintained throughout the season.

(3) Lime (either quicklime or slaked) added in the proportion of two ounces to the gallon of water will kill the larvæ in a few hours. Fresh lime should be added as soon as any live larvæ are detected. The permanent value of this method has not yet been established.

*Chemists can supply this solution. If any difficulty arises in obtaining it apply to this Office.

(4) Paraffin oil, sprayed as a very fine film on the surface of water kills larvæ rapidly by preventing them from breathing. The oil film must be maintained throughout the season. About $\frac{1}{2}$ oz. of oil to the square yard of water-surface is required (less than a teaspoonful for an ordinary water-butt). This method is particularly suitable in the case of barrels fitted with spigots so that the water can be drawn off from below the surface.

NOTE.—For shallow ponds or wells, the disinfectant solution (method 2) is the best, while paraffining (method 4) is more satisfactory in the case of deep water.

Allotment-holders are urgently requested to adopt one or other of these methods, and to communicate with me in the event of any difficulty arising.

Circulated by Order of the Council,

RALPH M. F. PICKEN,
Medical Officer of Health.

During the summer and autumn samples of mosquito larvæ from all parts of the town were submitted to Dr. Simpson of the National Museum of Wales, who reported that the larvæ were of the *culicine* type in every instance but one, the exception being a sample from the Tide Fields, Splott, where *anopheline* larvæ were found. In addition, *anopheline* larvæ were found in samples, not submitted to the Museum, from the neighbourhood of Penarth Road on the Leckwith Moors.

The *anopheline* mosquitoes, which convey malaria, are therefore scarce in Cardiff, although they do exist and might become a real danger under circumstances favourable to their multiplication. It is interesting to note that *culex pipiens*, which is generally regarded as one of the least troublesome of the mosquitoes, gave rise to a great deal of discomfort among the inhabitants of the neighbourhood mentioned in the above Report. The breeding place in that instance was ultimately discovered in large underground rain-water tanks, which have now been pumped dry and put out of use.

Acknowledgment should be made of advice and assistance in identifying mosquitoes and in connection with preventive methods afforded by Dr. Simpson, Keeper of Zoology, Welsh National Museum, and by Mr. John F. Marshall, Hon. Director, Hayling Island Mosquito Control.

OPHTHALMIA NEONATORUM.—The following is a record of the cases coming to the knowledge of the Department during the year :—

Notifications received	73
Duplicate notifications	9
Actual number of cases notified	64
TREATMENT—	
By Private Practitioners	19
,, ,, ,, assisted by District Nurses	17
As hospital out-patients, with home supervision by District Nurses ...	15
At Child Welfare Clinic, assisted by District Nurses	13
RESULTS OF TREATMENT—	
Vision unimpaired	58
Vision impaired	1*
Total blindness	—
Died	2
Left District	3

* Left eye totally blind, vision of right impaired.

TUBERCULOSIS.—The number of cases notified and the deaths from tuberculosis during the year are shown in the following table :—

TABLE III.

		Cases Notified.	Deaths.
(*a*) Pulmonary	Male	217	148
	Female	170	112
	Total	387	260
(*b*) Non-pulmonary	Male	57	26
	Female	39	23
	Total ...	96	49

The deaths from all forms of tuberculosis during the year amounted to 309, including 260 from pulmonary tuberculosis or phthisis. The mortality from phthisis was equal to an annual death-rate of 1·27 per 1,000, as compared with 1·35, the average rate in the ten years 1912–21. The 309 deaths from tuberculosis during the year include 20 in Glan Ely Hospital, 7 in Beechwood House Hospital, 2 in Sanatoria, 29 in the Cardiff Union Infirmary, 6 in Cardiff Royal Infirmary, 2 in the Royal Hamadryad Seamen's Hospital, and 2 in other institutions ; the remaining 241 dying in their own homes.

It is important to note that 50 of the 309 patients who died (16·1 per cent.) were previously unknown to the Department. Of the 260 deaths from pulmonary tuberculosis, 36 (13·8 per cent.) were unnotified, while 14 out of a total of 49 deaths from other forms of tuberculosis (28·5 per cent.) were unnotified.

While yearly returns of cases and deaths are of value for estimating the increase or decrease of tuberculosis in a community, they give little indication of the magnitude of the problem constituted by a disease which is protracted in character. For instance, if the average duration of life of a case of pulmonary tuberculosis be assumed to be three years, 300 notifications per annum (roughly the yearly number in Cardiff) represent an existing population suffering from pulmonary tuberculosis amounting to 900. In order, therefore, to arrive at more accurate information as to the state of tuberculosis in Cardiff, a survey of the known cases has been made, which is summarised in the following tables :—

TABLE IV.—PULMONARY TUBERCULOSIS. CASES ON THE REGISTER AT 31ST DECEMBER, 1922.

WARD.	MALES.				FEMALES.				Grand Total
	Under 5 years.	5–15 years.	Over 15 years	Total	Under 5 yrs.	5–15 yrs.	Over 15 yrs.	Total	
Central ...	...	4	26	30	...	3	28	31	61
South	1	1	24	26	...	...	17	17	43
Cathays ...	...	1	70	71	...	2	40	42	113
Adamsdown ...	...	...	6	6	...	...	9	9	15
Riverside ...	...	1	56	57	...	1	28	29	86
Canton ...	...	1	63	64	...	4	58	62	126
Grangetown ...	...	3	48	51	...	2	42	44	95
Roath	...	2	43	45	...	...	44	44	89
Park	...	1	65	66	...	...	45	45	111
Splott	...	4	47	51	...	2	52	54	105
Totals ...	1	18	448	467	...	14	363	377	844

TABLE V.—OTHER FORMS OF TUBERCULOSIS. CASES ON THE REGISTER AT 31ST DECEMBER, 1922.

WARD.	MALES.				FEMALES.				Grand Total
	Under 5 years.	5–15 years.	Over 15 years	Total	Under 5 yrs.	5–15 yrs.	Over 15 yrs.	Total	
Central ...	1	3	5	9	1	4	12	17	26
South	...	8	2	10	2	2	8	12	22
Cathays ...	3	...	17	20	1	6	19	26	46
Adamsdown ...	...	...	1	1	...	1	2	3	4
Riverside ...	1	3	15	19	1	5	8	14	33
Canton	...	5	15	20	1	3	17	21	41
Grangetown ...	...	5	19	24	...	5	13	18	42
Roath	2	1	12	15	...	2	14	16	31
Park	...	9	17	26	1	5	23	29	55
Splott	1	10	10	21	1	8	14	23	44
Totals ...	8	44	113	165	8	41	130	179	344

Care was taken to purge the records as far as possible of any patients who had been notified but found not to be suffering from tuberculosis, Dr. Gilchrist supplying the necessary clinical information. Although it is probable that a certain number of cases in whom the diagnosis is doubtful remain on the books, the deficiency of notifications already mentioned makes it certain that these figures understate the actual number of cases in Cardiff.

The total number of known cases of both the pulmonary and non-pulmonary forms of the disease corresponds closely with last year's returns (844 pulmonary, compared with 848 in 1921, and 344 non-pulmonary, as against 342 in 1921). Probably a fairly stable figure of 1,200 may be taken as the number of cases we have to deal with in Cardiff (old City). In the Report for 1921 comment was made upon the deficiency of notified female cases. Closer following up and more complete notification in 1922, seems to have redressed the balance, the proportion of female cases and female deaths to the totals being now approximately the same.

At 31st December, 71 cases were in Tuberculosis Sanatoria or Hospitals of the Welsh National Memorial Association, and 30 were in the City Lodge, a total of 101 institutional cases. The vast majority of the remainder were at home. In spite, therefore, of the Tuberculosis Scheme, the problem of tuberculosis remains chiefly domiciliary, and cannot be separated from the other problems of health and environment with which the Health Committee is concerned. The following tables show the number of cases and suspected cases under observation (in their homes) by the Tuberculosis Visitors.

TABLE VI.—CASES OF TUBERCULOSIS (ALL FORMS) UNDER OBSERVATION BY VISITING STAFF AT 31ST DECEMBER, 1922.

Municipal Wards.	Males	Females	Totals
Central	23	24	47
South	44	19	63
Cathays	73	53	126
Adamsdown	19	16	35
Riverside	29	21	50
Canton	53	40	93
Grangetown	58	49	107
Roath	34	30	64
Park	52	46	98
Splott	58	50	108
Totals	443	348	791

TABLE VII.—CASES OF SUSPECTED TUBERCULOSIS (UNNOTIFIED) UNDER OBSERVATION BY VISITING STAFF at 31ST DECEMBER, 1922.

Municipal Wards.	Males	Females	Totals
Central	8	8	16
South	7	6	13
Cathays	14	21	35
Adamsdown	1	...	1
Riverside	4	8	12
Canton	23	14	37
Grangetown	18	18	36
Roath	16	20	36
Park	16	24	40
Splott	18	15	33
Total	125	134	259

When compared with the 371 cases shown in the Report for 1921 as being under observation at the end of that year, these tables are a record of greatly increased activity in this important branch of the Anti-Tuberculosis Campaign.

During the year the negotiations with the Welsh Board of Health and the Memorial Association referred to in last year's Report were continued, and resulted in an increase of the Tuberculosis Nursing Staff, from the equivalent of one nurse to three, without additional cost to the City Council. Provision was also made for the clerical work necessarily attached to the co-ordination of the Tuberculosis Clinic with the Health Department. The larger question of the relationship between the whole out-patient organisation and the Health Department remains in abeyance.

As directly bearing on the prevention of tuberculosis, the results of Mr. Sugden's examinations for tubercle bacilli of samples submitted under the Cardiff Corporation Act, 1909, are again included here.

TABLE VIII.—MILK SUPPLIES EXAMINED FOR TUBERCLE BACILLI.

	No. of Samples	No. containing Tubercle Bacilli.
1911	9	—
1912	45	5
1913	42	1
1914	39	—
1915	45	—
1916	41	1
1917	32	—
1918	19	1
1919	13	—
1920	14	1
1921	27	2
1922	43	2

The number of samples has returned to the pre-war level, 43 being taken as compared with 27 in 1921. In two instances tubercle bacilli were found, the action taken being the subject of special reports to the Health Committee. The results indicate that (taking the last 5 years as a test) about 5 per cent. of milks coming into Cardiff contain tubercle bacilli.

TUBERCULOSIS IN CATTLE AT THE PUBLIC ABATTOIRS.—For comparison with the examinations of milk, attention may be directed to the proportion of beasts found suffering from tuberculosis in greater or less degree at the Public Abattoirs during the year. Altogether 10,205 cattle were slaughtered and tuberculosis was found *post mortem* in 607, or 5·9 per cent. The number of calves affected was, of course, much lower, only 16 out of 11,757 slaughtered, or 0·13 per cent., being affected.

Section 4.

NON-NOTIFIABLE INFECTIOUS DISEASES.

The incidence of these diseases on the child community is, of course, unknown, and the number of deaths attributed to them is the only measure of their occurrence. As shown in Section 2 of the Report, measles accounted for 14 deaths, giving a death-rate of 0·07 per 1,000 of the population, while 42 deaths were registered from whooping-cough, being at the rate of 0·20 per thousand. These are low rates, although they show an increase over last year's figure (1 death from measles and 11 from whooping cough) but they indicate a return of these diseases in epidemic form. No death was recorded from the other non-notifiable infectious diseases of childhood save diarrhœa and enteritis, the more serious forms of which may be classed as infectious.

DIARRHŒA AND ENTERITIS.—The cool summer of 1922 was accompanied by a decrease in the deaths from diarrhœal diseases, the mortality from this cause 0·13 per 1,000 of the population, being low as compared with 0·68 in 1921. Throughout the year, 27 deaths at all ages were recorded, of which 10 occurred in the third quarter. Some of the other 17 deaths were probably attributable to influenza taking the intestinal form.

ANTHRAX.—In connection with the case of anthrax reported last year, further examinations of portions of hide thongs from orange boxes were made by Dr. Parry Morgan, and similar investigations were continued at the Glasgow Public Health Laboratories. The presence of anthrax bacilli in these is found to be frequent.

INFLUENZA.—Toward the end of 1921 influenza was occurring in epidemic form in various parts of the world, and England had already been struck. The epidemic reached Cardiff in January, 1922, and began to be reflected in the records of death from influenza and respiratory diseases in the second and third weeks of that month. The bulk of the mortality fell on the five weeks ended 25th February, and within another week the respiratory death-rate had returned to normal.

During the year, 147 deaths were certified as being due to influenza, as compared with 18 in 1921, an increase of 129. This, however, indicates only part of the mortality for which this disease was responsible, and which is shown more fully when the deaths from influenza and from all respiratory causes are combined. The total number of deaths from these causes in 1922 was 758, as against 429 in 1921, an increase of 329. The effect of influenza on the total mortality for several years may be shown as follows :—

	(1) Deaths from all Causes.	(2) Deaths from Influenza and Respiratory Diseases.	(3) Percentage of (2) in (1).
1917 ...	2,433 ...	471 ...	19·4
1918 ...	3,188 ...	1,073 ...	33·6
1919 ...	2,652 ...	666 ...	25·1
1920 ...	2,411 ...	424 ...	17·6
1921 ...	2,452 ...	429 ...	17·5
1922 ...	2,704 ...	758 ...	28·0

The deaths from these causes therefore formed a rather higher proportion of the total than in 1919, but lower than 1918, and in all three years the percentage was considerably higher than in years when influenza was absent in epidemic form. Since measles and whooping cough were of low prevalence in 1922, and were therefore responsible for only a small part of the respiratory death-rate, and since influenza causes a fair number of deaths which appear under other causes (such as deaths from nervous, cardiac and gastro-intestinal causes) it may be safely assumed that the epidemic of 1922 was responsible for well over 300 deaths.

The course and magnitude of the epidemics of 1918, 1919 and 1922 are well illustrated by the accompanying diagrams which show, in weeks, the mortality from influenza and respiratory diseases since 1918, and also the effect on school attendance as recorded each month by the Education Department.

DIAGRAM A.- DEATHS FROM INFLUENZA AND RESPIRATORY DISEASES IN CARDIFF EACH WEEK DURING THE YEARS 1918-1922.

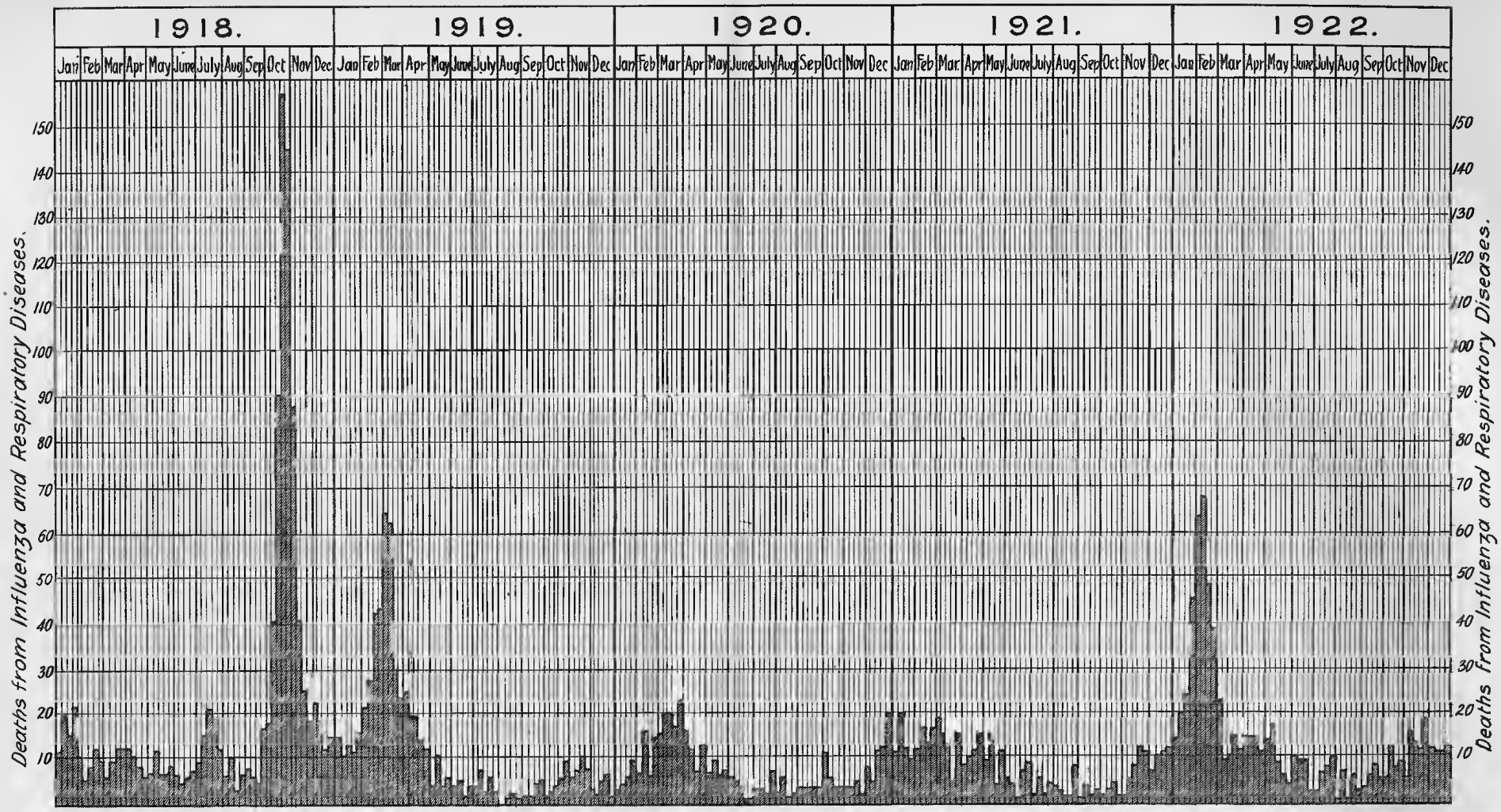
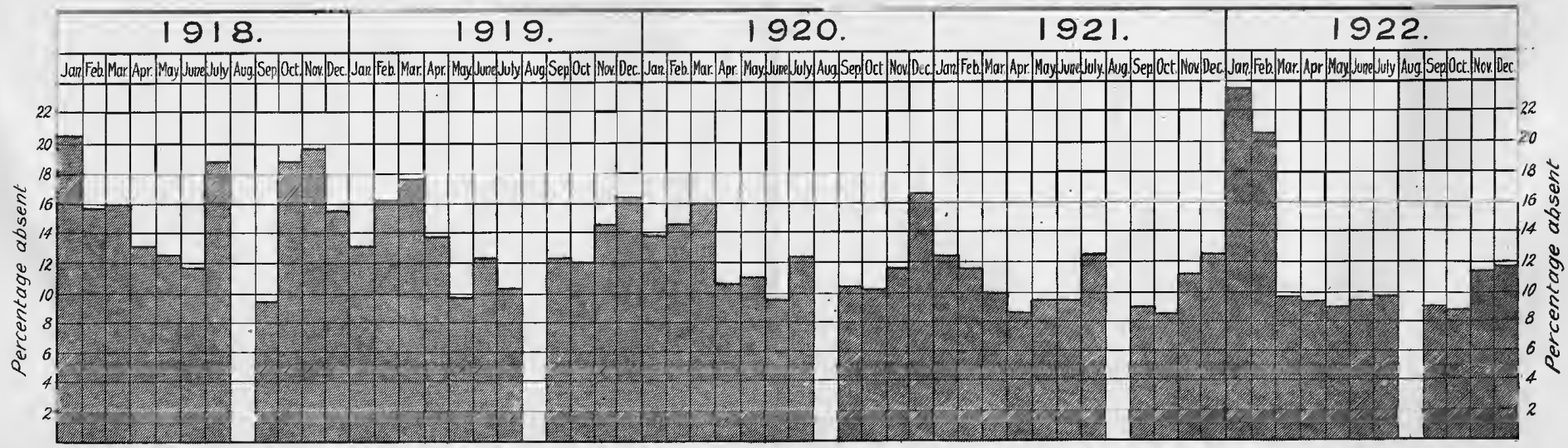


DIAGRAM B.- MONTHLY PERCENTAGE OF ABSENTEEISM OF CARDIFF SCHOOL CHILDREN DURING THE YEARS 1918-1922.



The recurrence of influenza after a lapse of three years raises a question as to the likelihood of further epidemics in the near future. If it does return, it is likely to be with diminishing volume and fatality. The theory that encephalitis lethargica is a precursor of influenza may be tested in the near future, as there has apparently been some increased prevalence of this disease locally in the first half of 1923.

VENEREAL DISEASES.—The following is a summary of the returns of work done during the year under the Public Health (Venereal Diseases) Regulations, 1916 :—

CARDIFF ROYAL INFIRMARY.

1. Total number of persons dealt with for the first time during the year, at or in connection with the out-patient clinic, and suffering from :—

(*a*) Syphilis	287
(*b*) Soft Chancre	20
(*c*) Gonorrhœa	364
(*d*) Syphilis and Soft Chancre	0
(*e*) Syphilis and Gonorrhœa	50
(*f*) Gonorrhœa and Soft Chancre	2
(*g*) Syphilis, Soft Chancre and Gonorrhœa	0
(*h*) Conditions other than Venereal	126
Total	849

2. Total attendances of all patients during the year at the Out-patient Clinic 10,428

3. Aggregate number of " In-patient Days " of treatment during the year ... 276

ROYAL HAMADRYAD SEAMEN'S HOSPITAL.

1. Total number of persons dealt with for the first time during the year, at or in connection with the Out-patient Clinic, and suffering from :—

(*a*) Syphilis	224
(*b*) Soft Chancre	35
(*c*) Gonorrhœa	227
(*d*) Syphilis and Soft Chancre	66
(*e*) Syphilis and Gonorrhœa	144
(*f*) Gonorrhœa and Soft Chancre	38
(*g*) Syphilis, Soft Chancre and Gonorrhœa	30
(*h*) Conditions other than Venereal	24
Total	788

2. Total attendances of all patients during the year at the Out-patient Clinic 12,875

3. Aggregate number of " In-patient days " of treatment during the year ... 3,775

Negotiations continued during the year with the Managers of the Cardiff Royal Infirmary and the Welsh Board of Health for transference of the Clinic there to improved premises at the rear of 10, Glossop Terrace. These are now nearing completion, and it is hoped that the premises may soon be ready for occupation.

Section 5.

SUMMARY OF NURSING ARRANGEMENTS, HOSPITALS AND OTHER INSTITUTIONS AVAILABLE FOR THE DISTRICT.

MATERNITY AND CHILD WELFARE.

CENTRES.—There were, at 31st December, six centres for antenatal and children's consultations in the old city, and 2 others had been taken over in the added area, a total of 8. Each week 11 children's and 2 antenatal consultations were then being held in the old city and 1 in the new area, a total of 14. Altogether during the year, 93 antenatal consultations met; 223 new patients were seen, and 488 attendances were registered. Children's consultations to the number of 515 were held in the old city, the number of children dealt with being 4,439, and the number of attendances, 25,786. The corresponding figures for the added area in November and December were 6 clinics, 245 children, and 335 attendances.

SUPPLY OF FREE MILK.—Milk was supplied free of charge in necessitous cases and on medical certificate to the following extent :—

	Fresh Milk.		Dried Milk.	
	Individual Cases	Pints of Milk Granted	Individual Cases	Pounds Granted
Children	182	9,170½	88	1,641
Mothers	128	4,634½	...	...
Totals ...	310	13,805	88	1,641

DOMICILIARY VISITS BY HEALTH VISITORS.—During the year, 17,591 visits to homes in connection with child welfare were made, as compared with 16,488 in 1921, the number of infants visited within four weeks after birth being 3,926, as against 4,191 in 1921.

INSTITUTIONAL TREATMENT.—Expectant mothers in necessitous circumstances, or suffering from abnormalities of pregnancy, emergency labour cases sent by practitioners, and children from the Child Welfare Department were treated at the Royal Infirmary, Maternity Branch, in the following numbers :—

Number of cases admitted—	
Mothers sent from Clinics	9
„ „ by Practitioners	6
Children	...
Total ...	15
Number of Patient-days	369

Dental Treatment.—A special dental clinic for expectant mothers and children under 5 years of age, was opened on 4th September, 1922. The following is a record of the work done up to the end of the year :—

	Mothers.	Children.	Total.
Inspected	28	16	44
Treated	15	8	23
Attendances	38	24	62
Teeth Extracted	29	38	67
,, Filled	9	6	15
Anæsthetics Administered ...	4	7	11
Local Anæsthetic Cases ...	3	...	3
Dressings	4	...	4
Scalings	7	...	7

Midwives.—No midwives are employed or subsidised by the Local Authority, but for a number of years the Education Authority has granted free theoretical instruction yearly for twelve prospective midwives by means of lectures delivered in the University College. This scheme is now administered by the Maternity and Child Welfare Committee, and arrangements have been made to extend it to practical instruction for three prospective midwives in each year.

The number of midwives practising in Cardiff at the end of the year was 117. These may be classified as follows, according to qualifications :—

Bona Fide	36
Certificate of London Obstetrical Society	6
Certificate of Central Midwives' Board	75
Total	117

and, according to type of practice :—

Midwives attached to public institutions	23
Midwives conducting private maternity homes ...	11
Midwives dealing with less than five cases per annum ...	30
Other midwives	53
Total ...	117

Home Helps.—In order to assist mothers confined at home without adequate domestic help and without means of obtaining it, " Home Helps " are provided at the cost of the Maternity and Child Welfare Committee. The fees are recovered from the patients if possible. The whole time of one of the Home Helps is retained for this work, a maintenance fee being paid when she is disengaged (which practically never occurs). Others are supplied when required from a list of women known to and approved by the Department.

Professional Nursing in the Home.

Apart from the employment of private nurses by contract, nursing for the sick poor is provided by Queen Victoria's Jubilee Institute for Nurses. The staff of the Local Authority does not undertake home nursing beyond the attention to minor ailments, skin diseases, etc., given by the School Nurses. Where necessary, cases are referred to the Institute by the School Medical and Child Welfare Departments, the Education and the Maternity and Child Welfare Committees granting £30 and £100 respectively to the funds of the Institute for this purpose. The nursing of measles and whooping-cough is included in the service rendered by the Institute in return for these contributions.

TABLE IX.—CLINICS AND TREATMENT CENTRES.

SERVICE.	DISTRICTS SERVED.	SITUATION.	ACCOMMODATION	OWNER OF PREMISES
MATERNITY AND CHILD WELFARE—Consultations	Central and Cathays	City Hall*	4 rooms (also used by School Medical Department)	Cardiff Corporation
	Splott and Roath	St. Saviour's Schools	3 rooms	St. Saviour's Parish Church
	Grangetown and Docks	Y.M.C.A. Hall	2 rooms	Y.M.C.A.
	Canton and Riverside	Hope Chapel Schoolroom	2 rooms	Trustees, Hope Baptist Chapel
	Adamsdown and Roath	10, Glossop Terrace*	3 rooms (also used for School Dental Clinic)	Cardiff Royal Infirmary
	South	Patrick Street	3 rooms	Hannah Street Mission.
SCHOOL CLINICS.	Whole City	City Hall	4 rooms (also used for Maternity & Child Welfare)	Cardiff Corporation
	Whole City	10, Glossop Terrace	3 rooms (also used for Maternity & Child Welfare)	Cardiff Royal Infirmary.
VENEREAL DISEASES.	Whole City	Cardiff Royal Infirmary	Out-patient Department of Hospital.	
	Port of Cardiff	Royal Hamadryad Seamen's Hospital	Do.	

* Antenatal Clinics also held.

TABLE X.—HOSPITALS.

SERVICE.	NAME	SITUATION	ACCOMMODATION	FINANCIAL RELATIONSHIP WITH CORPORATION.
MATERNITY.	Cardiff Royal Infirmary; Maternity Hospital	Glossop Terrace	31 beds	Cost defrayed of emergency cases and of patients recommended by M.C.W. Officers.
INFECTIOUS DISEASES.	Cardiff Sanatorium	Grangetown	160 beds	——
SMALL-POX.	Cardiff Small-pox Hospital	Grangetown	40 beds	——

Extension of the administrative block of the Sanatorium has now commenced, and arrangements are being made to implement the obligation undertaken to provide a new small-pox hospital.

The City suffers from a lack of hospital and convalescent accommodation for children. The question of institutions for convalescent and mildly ailing children was mentioned in Section 3 of the Report for 1921, under Tuberculosis, but the deficiency extends also to the type of provision required for the acute diseases of infancy and childhood. If the financial stringency of the Voluntary Hospitals can be overcome, the attention of the Local Voluntary Hospitals Committee might well be devoted to the need for a Children's Hospital.

Homeless Children.

Under the auspices of the Church of England Waifs and Strays' Society, the Edward Nicholl Home, Penylan, is now open. Accommodation is provided for 25 children.

Section 6.

LABORATORY WORK.

CARDIFF AND COUNTY PUBLIC HEALTH LABORATORY.—The following statement shows the work carried out for Cardiff during the year 1922.

Mixed Milks from Cardiff examined for Tubercle Bacilli :—

Number examined	43
Positive	2
Negative	41
Percentage of positive results	4·6

Although the samples were all from milk supplies serving the City, the original sources of the milk were, in most cases, outside Cardiff.

Bacteriological Examinations :—

Water Supplies	239
Suspected Diphtheria	670
Suspected Typhoid Fever	55
Sputa for Tubercle Bacilli	620
Urines for Tubercle Bacilli	9
Rodents for Plague	192
Diseased Meat	8
Gonococci	113
Cerebro-spinal Fluids	7
Dried Milks	5
Milks for Tubercle Bacilli	43
Milks for Other Organisms	184
Wasserman Re-actions	850
Other Examinations	17
Malaria	68
Ringworm	10
Spirochæta Pallida	5
Fæces for Organisms	16
Hide for Anthrax	19

Chemical Examinations :—

Water Supplies	72
River Waters	2
Milk and Milk Products	162
Urine Analyses	—
Other Examinations	16
Total	3,382

The specimens for suspected Diphtheria, Typhoid Fever and Tuberculosis submitted for examination from Cardiff, together with the results of such examinations, are shown below :—

TABLE XI.

Nature of Examination	Positive Results.	Negative Results.	Total.	Percentage of Positive Results.
Suspected Diphtheria	140	530	670	20·8
„ Typhoid Fever ...	12	43	55	21·8
„ Tuberculosis ...	189	431	620	30·4

Section 7.

ACTS, BYELAWS AND REGULATIONS.

Adoptive Acts in Force in the City of Cardiff.

Infectious Diseases (Prevention) Act, 1890. Adopted 19th February, 1891, coming into force on 1st May, 1891.

Public Health Acts Amendment Act, 1890, *Parts II. & III.*—Adopted 5th March, 1891, coming into force on 1st May, 1891.

Public Health Acts Amendment Act, 1907.—Certain Sections adopted 26th January, 1909, coming into force on the 16th March, 1909.

Bye-Laws and Regulations in Force in the City of Cardiff.

Bye-laws re Cleansing of Footways and Pavements, dated 6th July, 1881.

Bye-laws re Cleansing of Earth-closets, Privies, Ashpits and Cesspools, dated 6th July, 1881.

Bye-laws for Prevention of Nuisances arising from Snow, Filth, Dust, Ashes and Rubbish, and for the Prevention of the Keeping of Animals on any Premises so as to be Injurious to Health, dated 6th July, 1881.

Bye-laws as to Slaughter-houses, dated 10th September, 1888.

Bye-laws as to Common Lodging Houses, dated 13th March, 1891.

Bye-laws for the Regulation of Offensive Trades.—Blood boiler, blood drier, bone boiler, fat melter, fellmonger, glue maker, gut scraper, leather dresser, size maker, soapboiler, tallow-melter, tanner, tripe boiler, dated 12th July, 1893.

Bye-laws as to Seamen's Lodging Houses, dated 13th April, 1896.

Building Bye-laws, dated 21st March, 1900.

Bye-laws for the Good Rule and Government of the City of Cardiff, dated 26th September, 1904.

Bye-laws as to Management of Mortuary, dated 7th February, 1905.

Bye-laws as to Refuse and Night Soil. For regulating the hours during which and the mode and nature of the conveyance in which any refuse, night soil, or offensive or noxious substance, matter or liquid, may be removed from any place in or be carried in, through or out of the City, dated 11th December, 1907.

Dairies, Cowsheds and Milkshops Regulations, dated 10th February, 1908.

Section 8.

SANITARY ADMINISTRATION.

The general sanitary inspection of the district, inspection of factories, and workshops, inspection of shops under the Shops Acts, inspection of seamen's and common lodging houses, the inspection of meat and other food in shops and stores, and the taking of samples for analysis under the Sale of Food and Drugs Acts, were carried out during the year 1922 by Mr. S. Evans, Chief Sanitary Inspector, with the assistance of 13 Assistant Inspectors.

The following statement, in addition to other tables in this report, shows the nature and extent of the work performed by the Chief Inspector and his Assistants.

SUMMARY OF SANITARY INSPECTION OF DWELLING HOUSES, &c., DURING THE YEAR 1922 :—

Complaints of nuisances received	1,270
Number of houses inspected for defects	1,379
Number of houses inspected and recorded	717
Re-inspections of houses	14,209
Drains tested with smoke	86
,, ,, chemicals	1,056
Notices served :—	
Informal	2,096
Statutory	251
Notices complied with :—	
Informal	1,856
Statutory	229
Towns improvement Clauses Act, 1847 :—	
Notices *re* defective shutes served	589
,, ,, complied with	558

In connection with the sanitary inspection of dwelling-houses, 8,190 sanitary defects were remedied, details of which are given below :—

Drains unchoked and repaired	453
Soil pipes, ventilation shafts and fresh air inlets repaired	22
New W.C. pans provided	104
New syphon traps provided	15
New gully traps provided	14
W.C's. repaired	27
W.C's. cleansed	69
Flushing apparatus provided	8
,, ,, repaired	62
Trough outlets and waste pipes repaired	115
Roofs repaired	1,115
Shutes repaired	1,978
Down-pipes repaired	142
Chimneys repaired	73
Inside plastering repaired	511
Outside ,, ,,	79
Areas repaired	11
Yard surfaces repaired	408
Yards, etc., cleansed	233
Outhouses cleansed or repaired	20
Accumulations removed	80
Manure receptacles provided	2
,, ,, repaired	—
Inside walls repaired	214
Doors repaired	168
Floors repaired	407

Windows repaired	768
Ceilings repaired	200
Houses, bedding, etc., cleansed	232
Ventilation improved	15
Water supply provided	73
Overcrowding abated	1
Other nuisances abated	571

Particulars as to the inspection of premises periodically inspected during the year 1922 are herewith given :—

Offensive Trades :—	
Number on Register	38
Inspections	96
Notices served	3
Notices complied with	3
Dairies, Cowsheds and Milkshops :—	
Milkshops on Register	351
Cowsheds on Register	4
Inspection of milkshops	1,608
Notices served	55
Notices complied with	49
Inspection of cowsheds	75
Notices served	10
Notices complied with	10
Shops, Stores, &c. :—	
Inspections of butchers' shops	1,602
,, provision shops	320
,, markets	463
,, wholesale stores	55
,, fish and fruit shops	181
,, storage premises	1
,, street stalls	21
Other inspections	512
Butter factories	12
Wholesale dealers in margarine	91
Railway stations	52
Miscellaneous Inspections :—	
Public houses	509
Notices served	56
Notices complied with	61
Theatres, etc.	103
Notices served	5
Notices complied with	8
Fried-fish shops	425
Notices served	47
Notices complied with	41
Ice-cream shops	321
Notices served	17
Notices complied with	15
Piggeries	113
Notices served	—
Notices complied with	—
Houses let in lodgings	86
Notices served	11
Notices complied with	10

Smoke observations	25
Inspections of urinals	274
Visits to owners *re* notices	733
Other visits and inspections	4,012

COMMON LODGING HOUSES :—

Common Lodging Houses on Register	15
Day inspections	1,282
Night inspections	107
Notices served	86
Notices complied with	76

SEAMEN'S LODGING HOUSES :—

Seamen's Lodging Houses on Register	126
Licences granted	149
Licences relinquished	23
Day Inspections	4,809
Night Inspections	530
Notices served under Byelaws	223
Notices under Byelaws complied with	224
Notices served under Public Health Acts	139
Notices under Public Health Acts complied with	134
Persons cautioned for lodging seamen without being licensed ...	41

INSPECTION OF PLACES WHERE FOOD IS PREPARED :—

Inspection of butchers' shops	1,602
,, fried-fish shops	425
,, ice-cream shops	321
,, bakehouses	1,721

RATS AND MICE (DESTRUCTION) ACT, 1919.

Purchases of rat poisons from M.O.H's. Department	45
Amount of poisons sold ... ... 92 tins and 27½ lbs.	
Number of baits laid in public sewers	37,045
,, ,, eaten ,, ,, ...	10,684
,, ,, laid on canal banks	21,449
,, ,, eaten ,, ,, ...	3,405
,, ,, laid Glan Ely Hospital	3,030
,, ,, eaten ,, ,, ...	1,338
Total number of baits laid	61,524
Total number of baits eaten	15,427

CLOSETS ON THE CONSERVANCY SYSTEM.

During 1922 no earth closets were converted to the water carriage system. Closets remaining on the conservancy system at 1st January, 1923, were as follows :—

Earth closets	6
Privies	9
Total ...	15

FOOD INSPECTION.—The inspection of meat at the two Public Abattoirs has been carried out satisfactorily during the year under the supervision of Mr. P. J. Mullane, M.R.C.V.S., the Chief Meat Inspector. Inspection of food in shops and markets and sampling under the Sale of Food and Drugs Acts and Public Health (Milk and Cream) Regulations are carried out by Inspectors under the Chief Sanitary Inspector.

The facilities provided at the Public Health Laboratory are utilized for the purpose of diagnosis in connection with meat inspection.

In the following tabular statements particulars are given with reference to diseased or unsound food dealt with during the past year.

TABLE XII.

Animals slaughtered at the Municipal Slaughter-houses and number found suffering from tuberculosis, during the year 1922 :—

	Roath Abattoir.	Canton Abattoir.	Totals.	Found suffering from Tuberculosis	Percentage suffering from Tuberculosis
Cattle	9,264	941	10,205	607	5·9
Sheep and Lambs	45,690	6,258	51,948	...	...
Calves	11,171	586	11,757	16	0·1
Pigs	28,657	3,189	31,846	156	0·5
Totals ...	94,782	10,974	105,756	779	0·7

TABLE XIII.

Unsound carcases of meat surrendered at Abattoirs and destroyed by arrangement with the owners :—

Place	Carcases of				Totals
	Beef	Mutton and Lamb.	Veal	Pork	
Roath Abattoir ...	92	52	28	63	235
Canton Abattoir ...	4	...	...	7	11
Totals ...	96	52	28	70	246

TABLE XIV.—Causes of destruction of carcases.

Cause.	Beef	Mutton and Lamb	Veal	Pork	Totals
Carcinoma	1	...	...	...	1
Congestion	...	...	...	2	2
Decomposition ...	...	4	...	...	4
Dropsy	...	7	...	...	7
Dropsy and Emaciation	5	9	...	...	14
Emaciation	3	9	...	...	12
Found Dead	...	14	4	3	21
Jaundice	...	...	1	1	2
Johnés' Disease ...	4	...	...	...	4
Moribund	...	4	1	3	8
Nephritis	...	...	1	...	1
Pyæmia	1	...	1	2	4
Prematurity	...	...	6	...	6
Rheumatism	...	1	...	5	6
Peritonitis	...	...	1	2	3
Septic Pleurisy ...	...	1	2	1	4
Neoplasms	1	...	...	...	1
Tuberculosis	80	...	6	50	136
Pneumonia	...	2	3	...	5
Peritonitis (Septic) ...	...	1	...	1	2
Septicæmia	...	...	1	...	1
Traumatism	1	...	1	...	2
Totals ...	96	52	28	70	246

Approximate weight of diseased or unsound food surrendered at shops and stores and destroyed or otherwise dealt with by arrangement with the owners :—

	Tons	cwt.	lbs.
Beef	0	14	62
Veal, etc.	0	0	15
Mutton and Lamb, etc.	0	0	19
Pork, etc.	0	0	104
Rabbits and Hares	0	1	78
Fish	0	2	35
Provisions	1	2	35
Fruit	0	19	38
Bacon and Ham	0	0	33
Poultry	0	0	12
Offal	0	2	103
Vegetables	0	1	52
Total ...	3	6	26

SALE OF FOOD AND DRUGS ACTS.—Samples submitted for analysis during the year 1922, to the Public Analyst, Mr. Thomas Hughes, F.I.C. :—

TABLE XV.

Description	Number Analysed	Genuine	Adulterated
Condensed Milk (Informal) ...	8	8	...
Arrowroot	3	3	...
Shredded Wheat (Informal) ...	6	6	...
Butter (Informal)	1	1	...
Beer (Informal)	18	18	...
Grape-Nuts (Informal)	7	7	...
Force (Informal)	7	7	...
Stout (Informal)	6	6	...
Milk	679	648	31
„ (Skimmed)	25	21	4
Baking Powder	6	6	...
Sausage (Informal)	9	9	...
Cornflour	3	3	...
Raw Cream	6	2	4
„ „ (Informal)	39	26	13
Cream of Tartar (Informal) ...	6	6	...
Tea (Informal)	1	1	...
Totals	830	778	52

TABLE XVI.

Samples of milk analysed and proportion adulterated :—

	Samples Analysed	Samples Adulterated						
		Number	Percentage	Added Water	Deficient Fat	Deficient Fat & Coloured with Annatto	Preservatives	Coloured with Annatto
Wholesale—								
Taken at Railway Stations ...	84	...	...	...	...	...	...	...
Retail—								
Taken in shops, from carts, etc.	620	35	5·6	10	11	1	1	12
Total	704	35	4·9	10	11	1	1	12

TABLE XVII.

Examination for Preservatives.

Milk ; and Cream not Sold as Preserved Cream.

	Number of samples examined for the presence of a preservative *	Number in which a preservative was reported to be present
Milk	704	1
Cream	22	13

Table XVIII.—Summary of Legal Proceedings.

Proceedings taken under	No.	Fined	Cautioned	To pay Costs only	Dismissed	Withdrawn	Amount of Fines and Costs.
Sale of Foods and Drugs Acts ...	49	24	2	21	2	...	£80 12s. 0d.
Shop Hours Acts	22	7	2	13	...	...	£7 8s. 0d.
Public Health Acts, 1875, Secs. 79 and 95	3	1	...	...	...	1	£8, and 1 order made for work to be done in 14 days.
Do. do. Sec. 116	4	4	...	...	...	...	£63 0s. 0d.
Merchant Shipping Act... ...	7	4	...	...	3	...	£19 0s. 0d.
Totals ...	85	40	4	34	5	1	£178 0s. 0d.

Disinfection.—Infected premises are disinfected either by fumigation with sulphur dioxide or formaldehyde, or by means of a spray of formalin. Articles of clothing and bedding are removed from infected houses to the Disinfecting Station, and submitted to disinfection by saturated steam in a Washington Lyon's high pressure steam disinfecting apparatus.

During the year the routine disinfection comprised the following :—

Houses disinfected	844
Articles of bedding, clothing, etc., disinfected ...	7,652
,, ,, ,, ,, destroyed	120
Baths for scabies, pediculosis, etc.	635

Mortuary.—The number of bodies removed to the Mortuary during the year was 66 (55 males and 11 females). The number of post-mortem examinations performed was 34.

Factory and Workshop Act, 1901.—Under Section 132 of the Factory and Workshop Act, 1901, the Medical Officer of Health is required in his annual report to deal specifically with the administration of the Act (so far as the matters under the charge of the Sanitary Authority are concerned) and to send a copy of this report to the Secretary of State.

* Samples taken under the Sale of Food and Drugs Acts, and included in Table XV.

The Inspectors of Workshops made altogether 2,144 visits of inspection to factories, workshops, etc., during the year. Notices regarding sanitary defects were served in 289 instances, and 250 notices were complied with. Details of the work carried out under the Act are set forth in the following three tables.

TABLE XIX.

1.—INSPECTION OF FACTORIES, WORKSHOPS AND WORKPLACES.

PREMISES.	Number of		
	Inspections.	Written Notices.	Prosecutions.
Factories (including Factory Laundries)	462	45	—
Workshops (including Workshop Laundries)	1,217	157	—
Workplaces (other than Outworkers' premises included in Part 3 of this Report)	363	69	—
Total	2,042	271	—

2.—DEFECTS FOUND IN FACTORIES, WORKSHOPS AND WORKPLACES.

PARTICULARS.	Number of Defects	
	Found.	Remedied.
Nuisances under the Public Health Acts :—		
Want of Cleanliness	136	113
Want of Ventilation	9	10
Overcrowding	...	...
Other nuisances	185	167
Sanitary accommodation ... insufficient	8	11
Sanitary accommodation ... unsuitable or defective ...	29	28
Sanitary accommodation ... not separate for sexes ...	...	...
Breach of special sanitary requirements for bakehouses (Sec. 97 to 100)	...	...
Total	367	329

In the foregoing table, where the number of defects remedied exceeds those found, the defects were found in 1921 and remedied in 1922.

3.—HOME WORK.

NATURE OF WORK.	OUTWORKERS' LISTS, SECTION 107.							OUTWORK IN UNWHOLESOME PREMISES, SECTION 108.		OUTWORK IN INFECTED PREMISES, SECTIONS 109, 110	
	Lists received from Employers						Notices served on Occupiers as to keeping or sending lists.	Instances.	Notices served.	Instances.	Orders made (S. 110).
	Sending twice in the year.			Sending once in the year.							
	Lists.	Outworkers		Lists.	Outworkers.						
		Contractors.	Workmen.		Contractors.	Workmen.					
Wearing Apparel—											
(1) making, etc. ...	52	...	158	7	...	75	33	11	11	...	...
(2) cleaning & washing	...	...	...	...	...	...	...	...	...	...	...

TABLE XIX.—con.

4.—REGISTERED WORKSHOPS.

Workshops on the Register (S. 131) at the end of the Year.	Number.
Bakers	146
Bootmakers	113
Dressmakers and Milliners	146
Laundries	35
Tailors	117
Miscellaneous	529
Total number of Workshops on Register ...	1,086

5.—OTHER MATTERS.

Class	Number
Matters notified to H.M. Inspector of Factories :—	
Failure to affix Abstract of the Factory and Workshop Act (Sec. 133) ...	...
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Acts but not under the Factory Act :—	
Notified by H.M. Inspector	27
Reports (of action taken) sent to H.M. Inspector	25
Other (Notices of Occupation of Workshops received from H.M. Inspector) ...	35
Underground Bakehouses in use at the end of the year	1

TABLE XX.

Factories and workshops on the registers at the end of the year 1922, the number of inspections made, and the number of notices served during the year :—

	Number on Registers	Number of Inspections	Number of Notices served.
WORKSHOPS :—			
Bakers	146	529	52
Bootmakers	113	75	11
Dressmakers and Milliners	146	58	7
Laundries	35	120	24
Tailors	117	117	31
Miscellaneous	529	318	32
DOMESTIC WORKSHOPS :—			
Bootmakers	81	12	1
Dressmakers and Milliners	51	21	1
Laundries	1	...	...
Tailors	19	10	4
Miscellaneous	26	4	1
WORKPLACES :—			
Miscellaneous	381	363	69
OUTWORKERS' PREMISES :—			
Tailors	182	54	10
Miscellaneous	9	1	1
FACTORIES :—			
Bakers	27	179	11
Bootmakers	20	7	1
Laundries	9	12	2
Miscellaneous	490	264	31
Totals	2,382	2,144	289

TABLE XXI.

NUISANCES IN FACTORIES, WORKSHOPS, &c., DURING THE YEAR 1922.

NUISANCES.	Bakehouses.		Bootmakers' Premises		Dressmakers' and Milliners' Premises.		Laundries.		Tailors' Premises		Outworkers' Premises.		Miscellaneous.		Totals.	
	Found	Remedied	Found	Remedied	Found	Remedied	Found	Remedied	Found	Remedied	Found	Remedied	Found	Remedied	Found	Remedied
Want of cleanliness	59	58	6	3	...	...	15	9	15	10	1	2	40	31	136	113
Want of ventilation	...	...	...	...	1	1	...	...	4	4	...	...	4	5	9	10
Overcrowding	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Want of drainage of floors	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sanitary Accommodation — Insufficient ...	...	...	...	1	...	...	...	...	...	1	...	...	8	9	8	11
Sanitary Accommodation — Unsuitable or defective ...	...	1	...	...	2	...	1	...	7	2	...	1	19	24	29	28
Sanitary Accommodation — Not separate for sexes ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Defective or choked drains	...	...	1	2	1	...	...	...	9	8	3	5	16	14	30	29
Defective syphon traps	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1
Defective gully traps	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
Want of flushing apparatus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Defective flushing apparatus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Defective yard surfaces	1	1	...	...	...	...	...	...	...	...	...	...	2	3	3	4
Offensive accumulations	1	1	1	...	...	...	4	3	4	3	...	1	16	10	26	18
Want of manure receptacles	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Defective manure receptacles	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
Other nuisances	6	6	16	17	9	8	10	11	24	18	4	9	40	34	109	103
Totals	69	70	24	23	15	11	31	23	65	48	8	18	155	136	367	329

Shops Acts, 1912 and 1913.—Four of the Assistant Sanitary Inspectors have been appointed to carry out the provisions of these Acts under the Chief Inspector. The following is a record of the work done during the year.

Table XXII.

Closing Orders fixing the closing time of shops in operation in Cardiff, and number of inspections and infringements thereunder during the year :—

No. of Order	Trade	Area	Inspections	Infringements
2	Bootmakers	Grangetown	...	...
3	Bootsellers	Central Area	69	...
4	,, ...	Roath, Cathays and Park	77	...
5	,, ...	Riverside and Canton ...	53	...
6	Goldsmiths, etc.	Central Area	53	...
7	Pawnbrokers	,, ,, ...	...	...
8	Goldsmiths, Pawnbrokers, etc. ...	Whole of City, except Central	46	...
9	General and Fancy Drapers, Milliners, etc.	East of Taff Vale and Rhymney Railways ...	103	...
10	Toys or Fancy Goods	Central Area	16	2
11	Pharmacists, Chemists, and Druggists	Whole of City, except South	88	...
12	Ironmongers, Iron and Steel Sellers, etc.	Park Ward	15	...
13	Hay, Corn, Seed Merchants, etc. ...	Whole City	144	...
14	Bespoke Tailors	Central Area	42	...
15	Hairdressers	Whole City	161	...
16	Butchers	Whole City	418	...
		Totals ...	1,285	2

Other inspections and infringements under the Shops Act, 1912, during the year 1922 :—

Number of shops visited	6,670
Number of observations of shops	5,312

Infringements with reference to :—

Assistants' meal times	—
Assistants' half-holiday	66
Employment of young persons	43
Seats for female shop assistants	—
Closing of shops for weekly half-holiday	146

Most of the infringements were in connection with notices which are required to be exhibited in the interior and on the exterior of shops.

Section 9.

HOUSING.

1.—Number of Dwelling Houses in the City (before Extension).

Number of dwelling-houses of all classes	33,341
Number of working-class dwelling-houses	23,896
Number of working-class houses erected during the year	48
Number of new houses erected during the year—(*a*) Total	71
(*b*) As part of a Municipal Housing Scheme	8

2.—Dwelling Houses Unfit or not Reasonably Fit for Human Habitation.

I.—Inspection.

(1) Total number of dwelling-houses inspected for housing defects (under Public Health Acts)	1,379
(2) Number of dwelling-houses which were inspected and recorded under the Housing (Inspection of District) Regulations, 1910	717
(3) Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation	Nil
(4) Number of dwelling-houses (exclusive of those referred to under the preceding sub-heading) found not to be in all respects reasonably fit for human habitation	Nil

II.—Remedy of Defects Without Service of Formal Notices.*

Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their officers	1,856

III.—Action under Statutory Powers.*

A.—*Proceedings under Section* 28 *of the Housing, Town Planning, etc., Act,* 1919.

(1) Number of dwelling-houses in respect of which notices were served requiring repairs	Nil
(2) Number of dwelling-houses which were rendered fit : –	
(*a*) by owners	Nil
(*b*) by Local Authority in default of owners	Nil
(3) Number of dwelling-houses in respect of which Closing Orders became operative in pursuance of declarations by owners of intention to close ...	Nil

B.—*Proceedings under Public Health Acts.*

(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied	251
(2) Number of dwelling-houses in which defects were remedied :—	
(*a*) By owners	229
(*b*) By Local Authority in default of owners	Nil

C.—*Proceedings under Section* 17 *and* 18 *of the Housing, Town Planning, etc. Act,* 1909.

(1) Number of representations made with a view to the making of Closing Orders	Nil
(2) Number of dwelling-houses in respect of which Closing Orders were made ...	Nil
(3) Number of dwelling-houses in respect of which Closing Orders were determined, the dwelling-houses having been rendered fit	Nil
(4) Number of dwelling-houses in respect of which Demolition Orders were made	Nil
(5) Number of dwelling-houses demolished in pursuance of Demolition Orders	Nil

3.—Unhealthy Areas.

Areas represented to the Local Authority with a view to Improvement Schemes under (*a*) Part I., or (*b*) Part II. of the Act of 1890.

(1) Name of Area	Nil
(2) Acreage	Nil
(3) Number of working-class houses in area	Nil
(4) Number of working-class persons to be displaced	Nil

4.—Number of houses not complying with the building bye-laws erected with consent of Local Authority under Section 25 of the Housing, Town Planning, etc. Act, 1919 ... —

5.—Staff engaged on housing work with, briefly, the duties of each officer ... ... —

The Sanitary Inspector has been designated as the Officer under Art. I. (3) of the Housing (Inspection of District) Regulations, 1910.

*For details see Section 8, pages 32 and 33.

APPENDIX I.

PRELIMINARY NOTE ON THE CENSUS OF 1921, WITH SPECIAL REFERENCE TO HOUSING CONDITIONS.

It is important to remember that the Census of 1921 was taken on 19th June instead of 24th April as originally planned. The population returned for Cardiff, therefore, was probably lower than the actual, because of the temporary absence of families and individuals on holidays. The Census figures, too, apply only to Cardiff before extension of the boundaries, and details similar to those furnished are required for the added area. With these reservations, the Census Report contains a great deal of valuable information as to the state of the population of the City.

POPULATION.—The total population is returned as 200,184, males numbering 99,614, and females 100,570. As compared with the population in 1911, viz. 182,259, this represents an increase of 17,925, or 9·8 per cent. The rate of increase from 1901 to 1911 was 10·9 per cent. Cardiff has therefore shared to a much less extent the diminishing rate of increase found in Glamorgan (from 30·3 to 11·7 per cent.) and in England and Wales generally (from 10·9 to 4·9 per cent.)

When compared with the other towns with populations over 200,000, Cardiff shows the highest rate of increase :—

	Percentage increase of population.
London (City and Administrative County)	—0·9
Birmingham	9·4
Liverpool	6·5
Manchester	2·3
Sheffield	6·6
Leeds	1·2
Bristol	5·6
West Ham	4·1
Kingston-upon-Hull	3·2
Bradford	—0·9
Newcastle-upon-Tyne	3·1
Nottingham	1·1
Portsmouth	5·9
Stoke-on-Trent	2·5
Leicester	3·1
Salford	1·2
Plymouth	1·2
Cardiff	9·8

The comparison may be extended to certain other towns and large urban districts in Glamorgan. :—

	Percentage increase of population
Cardiff	9·8
Swansea	9·4*
Merthyr Tydfil	—1·1
Rhondda	6·6
Barry	15·3
Pontypridd	9·2
Aberdare	8·2
Mountain Ash	2·5

Cardiff's rate of increase is therefore only exceeded by that of Barry.

* The increase consists mainly of population included by extension of boundaries in 1918.

On the other hand, the overflow of population into adjacent districts is shown by the increase in the following areas :—

	Percentage increase of population
Llandaff and Dinas Powis Rural District (now Cardiff Rural District)	26·9
Llandaff Parish	45·2
Llanishen ,, ...	30·4
Whitchurch ,, ...	24·3
Penarth Urban District	10·4
Rumney Parish	34·1

Some of these areas, the increased population of which is to a large extent associated with the growth of Cardiff, have now been included in Cardiff by the Boundary Extension Act, 1922.

The excess of births over deaths in Cardiff during the 10 years 1911–21, was 18,531, which is more than the actual increase of population by 606. When it is remembered, however, that the population was artificially low at the date of Census, and that well over 300 deaths on service are included in the 606, it is evident that Cardiff has lost very little, if any, population by migration from the city.

Population Density, Ward Statistics, Etc.—It is not intended to devote much attention to these statistics, as the area and the ward boundaries have been altered since the date of the Census. The density of population in Cardiff in 1921 was 30·8 persons per acre, as compared with 28·1 in 1911. The wards with highest density were Cathays (66·7), Canton (62·1), and Riverside (61·0), while Adamsdown, with 12·8 persons to the acre, was the least densely populated. Individual areas within wards, however, vary considerably, as is shown in Appendix II. of this Annual Report. It should also be noted that the boundary extension leaves Cardiff still the most densely populated administrative area in Glamorgan.

The wards showing the greatest increase of population were Canton, with 25·7 per cent., and Roath, with 15·5 per cent., while Riverside actually fell by 7·6 per cent. Five wards showed an excess of males over females, notably South and Adamsdown Wards.

The Census population in 1921 of the new wards (extended City) as supplied by the Registrar General, were as follows :—

Ward.	Population. (unrevised).
Central	17,563
South	15,016
Cathays	19,107
Adamsdown	20,192
Riverside	19,251
Canton	19,072
Grangetown	16,825
Roath	16,340
Plasnewydd	17,511
Splott	20,678
Penylan	12,595
Llandaff	14,015
Gabalfa	11,478
Total ...	219,643

Housing.—Probably the most valuable tables in the Census Report will be found to be those dealing with the state of the population in relation to housing. An attempt has therefore been made to analyse them for Cardiff on lines similar to those adopted by the Registrar General in discussing the records for the whole County. As expected, a great deterioration of housing conditions was revealed by the Census.

The following table shows the process of deterioration in broad outline :—

TABLE I.

	1921	1911	Increase or Decrease	
			Amount	Per cent.
Structurally separate dwellings occupied	32,596	31,159	+1,437	+4·6
,, ,, ,, vacant	570	903	—333	—36·9
Private families	43,165	37,579	+5,586	+14·9
Excess of private families over dwellings occupied ...	10,569	6,420	+4,149	...
Average number of private families per occupied dwelling	1·32	1·21	...	...
Average number of persons per occupied dwelling ...	6·14	5·85	...	...

An increase of 15 per cent. in the number of private families has been met by an increase of less than 5 per cent. in the occupied dwellings, leading, as a result, to an increase from 1·21 to 1·32 in the average number of families occupying each, and from 5·85 to 6·14 in the average number of inhabitants per dwelling. The number of inhabited dwellings at the Census of 1911 was probably understated, so that the density of occupation has probably increased to a slightly greater extent than is shown by the above table. As it is, the increase from 1·21 to 1·32 families per house represents a shortage of about 3,080 inhabited houses as compared with 1911, in spite of the absorption of a number of the houses then vacant.

The state of affairs is further illustrated by the records of multiple tenancy of dwellings :—

TABLE II.

Structurally Separate Dwellings Occupied by Private Families.

	1—3 Rooms	4—5 Rooms	6 or more Rooms	Total
Occupied by 1 private family	666	7,510	14,495	22,671
Occupied by 2 private families	9	1,213	7,386	8,608
Occupied by 3 or more private families	3	68	971	1,042
				32,321

Houses to the number of 9,650 were found to be accommodating more than one family, and of these, 1,293 were of 5 rooms or less, and therefore unfitted for multiple tenancy under any conditions. It should be observed, however, that lodgers who board separately from the families with whom they reside are included by the Registrar General as separate private families.

The following statement presents the same facts in somewhat a different light :—

TABLE III.

	Number	Per cent.
Families living in single occupation of separate dwellings	22,671	52·5
,, ,, two in a dwelling	17,216	39·9
,, ,, dwellings containing three or more families each	3,278	7·6
Total	43,165	100·0

It will be seen that almost half the families in Cardiff were living under conditions of multiple tenancy. This compares very unfavourably with the corresponding proportion for the whole County, viz. 29 per cent.

Accurate data for comparison with the above percentages are not provided in the 1911 Census Report, but it has already been seen that the excess of families over houses has increased in the interval from 6,420 to 10,569, *i.e.*, by 4,149. While, therefore, multiple tenancy is by no means a new feature in the housing problem of Cardiff, it has become greatly accentuated. On the other hand, the estimate, already arrived at from the density rates, of a comparative shortage of 3,080 houses, indicates that the houses occupied by more than one tenant were more overcrowded in 1911 than in 1921, since the estimate falls short of the increased excess of families over houses by more than 1,000. It is an acknowledged fact that multiple tenancy in Cardiff is not entirely due to housing shortage, but partly to the preponderance of houses larger and of higher rental than it is possible to find single tenants for. For instance, the average number of rooms per structurally separate dwelling, which is 5·6 in Glamorgan generally, and as low as 5·2 in Swansea, is 6·1 in Cardiff.

It is interesting, then, to compare the number of separate houses of different sizes with the number of occupied dwellings or tenements of corresponding sizes. The following table has been prepared for this purpose, the fallacy previously introduced by the lodger ranking as a "family" being eliminated by the exclusion of all dwellings occupied by "single person" families :—

TABLE IV.

Number of Rooms	Units of occupation inhabited by individual families*.		Structurally separate dwellings.	
	Number	Per cent.	Number	Per cent.
1—3 ...	12,384	30·1	678	2·1
4—5 ...	13,853	33·6	8,791	27·2
6 or more ...	14,928	36·3	22,852	70·7
Total ...	41,165	100·0	32,321	100·0

This very striking comparison shows that almost a third of the families of Cardiff were living on Census night in dwellings of 1–3 rooms, although only 2 per cent. of the existing separate houses were of this size ; that almost two thirds of the families lived in dwellings of five rooms or less, while less than a third of the separate houses were of this size ; and that the separate houses of 6 rooms or more were enormously in excess of the tenements of corresponding size. The dwellings of 5 rooms or less were in excess of the separate houses of the same size by 16,768, while the larger occupancies fell short of the larger houses by 7,924. The excess of smaller tenancies over smaller houses led, of course, to multiple tenancy of larger houses, probably about 8,000 of which were so occupied apart from those accommodating lodgers.

What then, has been the effect of the shortage of houses and increase of multiple tenancy upon the living conditions of the individual families ? It will depend partly on any change which may have occurred in the average size of family during the intercensal period. A comparison is made in the following table :—

TABLE V.

	1921	1911
Average number of persons per private family	4·39	4·63
Average number of rooms occupied per family :—		
(*a*) in all units of occupation	4·45	...
(*b*) in units of occupation of 1–9 rooms only	4·44	4·96
Average number of rooms occupied per person :—		
(*a*) in all units of occupation	1·03	...
(*b*) in units of occupation of 1–9 rooms only	1·01	1·08

* Exclusive of units in the occupation of single person families.

Throughout the Country generally, the average size of family has diminished. At the same time the average number of rooms occupied by each family in Cardiff (so far as comparative figures are available) has fallen in even greater proportion than the decline in the average size of family, leading to a reduction in the average number of rooms for each person from 1·08 to 1·01 (in houses of 9 rooms or less, accommodating 98 per cent. of the population).

If the recognised standard of two persons per room as an index of overcrowding be used, with the reservation that it is not necessarily a reliable standard, a simple comparison may be made between 1921 and 1911, as follows :—

TABLE VI.

	1921	1911
Population in families living more than two persons to a room	16,243	8,410
Percentage of such population to total population	8·6	4·8

According to this standard the amount of overcrowding in Cardiff was almost doubled in the interceusal years.

The Registrar General, however, has provided a more useful test, in the form of standard densities of personal occupancy for different sizes of families in England and Wales in 1911. By employing these, a comparison may be made between the position of Cardiff in 1921 and 1911 in relation to all English and Welsh County Boroughs in 1911 :—

TABLE VII.

	Actual Number of Rooms occupied	Number of Rooms required for Standard Densities for all County Boroughs in 1911.	Difference	Ratio per cent. difference to standard.
1911	181,591	156,865	+24,726	+15·8
1921	188,803	190,694	—1,891	—1·0

These figures, as before, apply only to houses of 9 rooms or less, but this limitation is of little importance. Whereas Cardiff had in 1911 occupied rooms in excess by 16 per cent. of the number which would have been required to reach the density standards of the County Boroughs generally, in 1921 it had actually fallen to 1 per cent. below that standard. In order to maintain its 15·8 per cent. advantage, 32,027 rooms would require to have been provided over and above the recorded increase of 7,212 rooms occupied in 1921. If the standard densities for England and Wales generally were used, and not those only applicable to the County Boroughs, the deficiency would be considerably greater. Expressed in houses of 4 and 5 rooms, the deficiency of 32,000 rooms would have been met by the provision of about 7,000 houses during the interceusal period.

APPENDIX II.

EXTRACT FROM A REPORT ON HOUSING—UNHEALTHY AREAS.

" On 14th December, 1922, the Town Clerk received a letter from the Ministry of Health, drawing attention to the annual grant of £200,000 provided by the Government as contribution to Local Authorities' Improvement Schemes throughout England and Wales, and stating that some allocation might be made to Cardiff in the event of an approved scheme for this purpose being undertaken. Any grant would not be more than one half of the loss to the Local Authority entailed by such a scheme. Reference was made to the Survey of 1919, which showed that the problem of unhealthy areas in Cardiff was a relatively small one.

" In considering the application of this proposal to Cardiff, the following comments may be useful :—

" 1. General Considerations.—The grant is apparently intended to encourage the demolition of slum areas and rehousing of the displaced population before a sufficiency of houses for the working classes has been provided under the general housing schemes of the Local Authority. This policy has probably been adopted in recognition of the urgency of the removal of slum areas from a public health standpoint, and the doubtful prospect of general housing schemes reaching such a state of advancement for several years as would permit of the absorption of the population of slum areas either into the houses provided under the schemes or into houses vacated by those becoming tenants of the Local Authority's houses. Such absorption would, in my opinion, have been preferable, but if a reconstruction scheme on the lines suggested in the Ministry's letter is undertaken, it will be necessary to accommodate the population so displaced in houses at no great distance from their present dwellings, since the majority of the dwellers in these areas are employed in the same neighbourhood ; and it would be unfair to cause serious inconvenience to the tenants by any action which the Corporation might take. Such a proposal, therefore, entails a special rehousing scheme in or adjacent to the area cleared.

" 2. Grant Available for Cardiff. The Ministry's letter contains nothing to indicate on what basis they will decide how much money may be allocated to the various Local Authorities, but it is likely that some rough estimates of the needs of these Authorities have been made. Otherwise the total grant available might be absorbed by those Authorities earliest in the field with their schemes. The fact that no date is mentioned before which schemes must be submitted makes the importance of some such estimate all the greater.

" If it were arrived at on the basis of population, then Cardiff's share might be put down roughly at one hundredth (the proportion of population to that of all the 105 great towns). This would give a maximum grant of £2,000. But the problem being much less urgent in Cardiff than in many other towns, it is not unlikely that the amount would be less than this. If any scheme were proposed, its extent would be affected by the amount of grant obtainable.

" 3. Congested Areas. Although there are in Cardiff many houses which are not maintained in a proper standard of repair, and which constantly require to be dealt with by the Department under the statutory powers provided for this purpose, the only areas which can be regarded as unhealthy in the sense of the Housing of the Working Classes Acts are in the Central district, which is gradually being converted for business purposes. With this natural process of development going on, it is questionable if any large scheme of clearance and rehousing would be justified. It would appear that a better solution would be found in the acceleration of building schemes on the outskirts of the City, and the application, where necessary, of Section 17 of the Housing and Town Planning Act, 1909, for the closure of individual houses as accommodation for the tenants elsewhere became available.

" In his Annual Report for 1919, Dr. Walford referred to that portion of the City which might properly be regarded as congested, and showed how the mortality, general, infantile, and from certain specific causes, exceeded the corresponding rates for any other parts of the City. That area had already been largely invaded by business premises. For present purposes, attention may be limited to a smaller area, also central but consisting mainly of dwelling houses.

" Details of this area are set out in Table I. attached hereto. It is bounded on the south-west by a line drawn behind the premises on the north-east side of Bute Street, extending from the north-west side of Millicent Street to the middle of Bute Terrace ; on the north-west by a line drawn behind the property on the north-west side of Millicent Street and Little Frederick Street (diverging so as to include Roberts Court and Nos. 29, 30, 33, and 33a, Mary Ann Street) ; thence in a northerly direction along the middle of Love Lane to the boundary of No. 1, East Terrace, and thence along the northern boundary of No. 1, East Terrace to the Dock Feeder ; on the east by the boundary wall of the Dock Feeder from a point opposite 1, East Terrace to Love Lane, and thence along the middle of Love Lane to Bute Terrace ; and on the south-east by the middle of Bute Terrace from a point opposite to Love Lane to a point opposite No. 1, Bute Terrace.

" This area covers 11·85 acres and contains 300 occupied dwelling houses, 6 vacant houses, 3 houses not used as dwelling houses, and 61 warehouses or stores, 36 of which are converted dwelling houses. The total number of tenements in the 300 dwelling houses is 433 (372 unfurnished and 61 furnished or partly furnished) and the number of inhabitants is 1,817, of whom 437 are children under 10 years of age. The total weekly rental for unfurnished tenements is £168 5s. 7½d. and for furnished or partly furnished £29 12s. 7d. The rentals given for unfurnished tenements do not include the excess rates in 163 instances, so that in estimating the amount of money available for rental under a rehousing scheme (on the assumption that the tenants would be expected to pay rent at the present level) at least £200 weekly might be taken as an approximate figure.

" Quite apart, however, from any question of profit and loss, it is more than doubtful if any proposal to deal with this area would succeed. The number of persons per acre housed here is 154. In a memorandum by Mr. Herbert Jennings, of the Ministry of Health, appended to the Final Report of the Unhealthy Areas Committee, 1921, it is stated that the whole residential area of London contains 130 persons to the acre, that certain metropolitan boroughs average 400 persons to the acre, and that the worst wards in these boroughs average over 500 persons to the acre. Mr. Jennings assumes that ' any large ultimate clearance and reconstruction is possible only where the density exceeds 200 persons per acre.' It does not appear, therefore, that a strong case could be made for clearing the area in question, especially when its proximity to the business area and its tendency to be absorbed for this purpose are taken into consideration."

TABLE I.

CONGESTED AREA, CENTRAL WARD.—Houses Occupied, Converted and Removed, and Total Population in Residence. Area 11·85 Acres.

No. of warehouses built on site of houses.	No. of houses converted to stores.	No. of houses being converted.	Total of columns 1, 2, & 3.	Vacant houses.	Houses not used as dwelling-houses.	Houses occupied.	No. of rooms	Population.
21	36	4	61	6	3	300	1,295	1,817

Summary of Unfurnished Tenements, Showing Size of House, Number of Occupants and Rental.

No. of Rooms	No. of tenements	No. of occupants.			Total Rental	Average Rental	Occupiers unemployed.
		Over 10 years	Under 10 years	Total			
					£ s. d.	£ s. d.	
1	35	62	16	78	7 15 11	0 4 4¼	...
2	92	213	106	319	30 12 4½	0 6 7¾	...
3	57	174	65	239	20 9 1	0 7 2	...
4	96	355	96	451	43 5 0½	0 9 0	...
5	22	94	26	120	11 14 9½	0 10 8	...
6	37	167	51	218	23 9 11	0 12 8½	...
7	22	147	31	178	16 17 7	0 15 4	...
8	5	26	3	29	3 8 3	0 13 7¾	...
9	3	10	2	12	5 5 6	1 15 2	...
10	3	22	...	22	5 3 6	1 14 9	...
Totals ...	372	1,270	396	1,666	168 5 7½	0 9 0½ (Average)	73

Summary of Furnished and Partly Furnished Tenements, Showing Size of House, Number of Occupants, and Rental.

1	53	95	32	127	25 10 7	0 9 9½	...
2	8	15	9	24	4 2 0	0 10 3	...
Totals ...	61	110	41	151	29 12 7	0 9 8½ (Average)	17

APPENDIX III.

Report for 1922 of the Medical Superintendent of Cardiff Sanatorium.

	0–5 yrs.	5–15 yrs.	15–25 yrs.	25–35 yrs.	35–45 yrs.	45–55 yrs.	Totals
Remaining in Hospital 31st Dec., 1921 :—							
Scarlet Fever	26	46	9	2	2	...	85
Diphtheria	13	15	5	2	...	...	35
Enteric Fever	...	...	...	1	...	...	1
Other Diseases	...	...	1	...	...	...	1
Totals	39	61	15	5	2	...	122
Admitted during the year 1922 :—							
Scarlet Fever	65	203	43	9	2	1	323
Diphtheria	52	99	25	5	3	1	185
Enteric Fever	1	2	1	1	...	1	6
Small Pox	...	...	...	...	1	...	1
Other Diseases	...	4	4	3	...	1	12
Totals	118	308	73	18	6	4	527
Totals under Treatment in 1922	157	369	88	23	8	4	649
Of the above there were discharged :—							
(*a*) Recovered :—							
Scarlet Fever	85	217	43	9	4	1	359
Diphtheria	55	92	25	6	3	1	182
Enteric Fever	1	2	1	2	...	1	7
Small Pox	...	...	...	...	1	...	1
Other Diseases	...	...	5	2	...	1	8
Totals	141	311	74	19	8	4	557
(*b*) Died :—							
Scarlet Fever	...	1	...	1	...	...	2
Diphtheria	3	6	...	...	...	...	9
Enteric Fever	...	...	...	...	...	...	...
Other Diseases	...	1	...	1	...	...	2
Totals	3	8	...	2	...	...	13
Remaining in Hospital 30th December, 1922 :—							
Scarlet Fever	6	31	9	1	...	...	47
Diphtheria	7	16	5	1	...	...	29
Other Diseases	...	3	...	...	...	...	3
Totals	13	50	14	2	...	...	79
Totals under treatment in 1922	157	369	88	23	8	4	649

Mortality per cent. under treatment :—

Scarlet Fever... ...	0·5	Enteric Fever ...	—
Diphtheria	4·1	Other Diseases ...	15·4

B. W. BROAD, M.B., C.M., *Medical Superintendent.*

APPENDIX IV.

STATISTICAL RETURNS OF BIRTHS, DEATHS, ETC. (OLD CITY).

TABLE I.

BIRTHS, LEGITIMATE AND ILLEGITIMATE, IN MUNICIPAL WARDS, 1922 :—

Municipal Wards.	Legitimate.		Illegitimate.		Totals.		GRAND TOTALS.
	Males.	Females	Males.	Females.	Males.	Females.	
Central	104	110	13	7	117	117	234
South	123	117	6	11	129	128	257
Cathays	240	255	8	9	248	264	512
Adamsdown ...	141	147	9	5	150	152	302
Riverside	180	179	6	2	186	181	367
Canton	294	286	11	9	305	295	600
Grangetown ...	369	333	5	7	374	340	714
Roath	240	222	5	5	245	227	472
Park	206	206	7	7	213	213	426
Splott	253	254	7	3	260	257	517
Totals ...	2,150	2,109	77	65	2,227	2,174	4,401

TABLE II.

Causes of and Ages at Death, 1922.

Causes of Death.	Nett Deaths at the subjoined ages of "Residents" whether occurring within or without the District.									Total Deaths whether of "Residents" or "Non-Residents" in Institutions in the District.
	ALL AGES.	Under 1 year.	1 and under 2 years.	2 and under 5 years.	5 and under 15 years.	15 and under 25 years.	25 and under 45 years.	45 and under 65 years.	65 and upwards.	
1	2	3	4	5	6	7	8	9	10	11
All causes { Certified	2,704	359	89	59	76	155	408	711	847	597
All causes { Uncertified	...	...	...	...	...	...	...	...	...	...
Enteric Fever	2	...	...	...	...	...	2	...	...	2
Small-pox	...	...	...	...	...	...	...	...	...	...
Measles	14	4	4	5	1	...	...	...	...	1
Scarlet Fever	2	...	...	...	1	...	1	...	...	1
Whooping Cough ...	42	24	13	5	...	...	...	...	...	...
Diphtheria and Croup ...	15	...	2	6	7	...	...	...	...	5
Influenza	147	9	5	8	6	10	31	37	41	10
Erysipelas	...	...	...	...	...	...	...	...	...	...
Phthisis (Pulmonary Tuberculosis) ...	260	...	3	2	8	77	113	56	1	44
Tuberculous Meningitis ...	21	3	3	5	4	2	3	1	...	3
Other Tuberculous Diseases	28	1	...	...	5	7	8	3	4	11
Cancer, malignant disease	208	...	...	...	1	2	22	99	84	71
Rheumatic Fever ...	13	...	...	...	5	1	3	3	1	1
Meningitis	12	3	2	1	3	1	1	...	1	5
Organic Heart Disease ...	278	1	...	...	7	5	29	113	123	45
Bronchitis	304	41	10	1	2	3	18	70	159	40
Pneumonia (all forms) ...	255	62	36	15	5	10	42	59	26	39
Other diseases of Respiratory organs ...	52	4	...	2	1	2	8	18	17	15
Diarrhœa and Enteritis ...	27	22	4	...	...	...	1	...	...	2
Appendicitis and Typhlitis	11	...	...	...	2	2	4	2	1	16
Cirrhosis of Liver ...	14	...	...	...	1	2	4	6	1	5
Alcoholism	...	...	...	...	...	...	...	...	...	...
Nephritis and Bright's Disease ...	77	...	1	...	1	2	11	39	23	22
Puerperal Fever ...	12	...	...	...	...	4	8	...	...	7
Other accidents and diseases of Pregnancy and Parturition ...	15	...	...	...	...	1	14	...	...	7
Congenital Debility and Malformation, including Premature Birth ...	127	126	...	1	...	...	...	...	...	28
Violent Deaths, excluding Suicide	80	3	1	1	5	4	22	27	17	50
Suicide	10	...	...	...	...	1	2	7	...	2
Other Defined Diseases ...	671	56	4	6	10	19	59	169	348	166
Diseases ill-defined or unknown	7	...	1	1	1	...	2	2	...	1
Totals	2,704	359	89	59	76	155	408	711	847	597
Sub-entries (included in above figures)—										
Cerebro-spinal Meningitis	1	1	...	...	...	...	...	...	...	1
Broncho Pneumonia ...	127	47	31	12	5	1	6	16	9	127
Encephalitis Lethargica	1	...	...	...	...	1	...	...	...	1

TABLE III.

INFANT MORTALITY, 1922.

NETT DEATHS FROM STATED CAUSES AT VARIOUS AGES UNDER ONE YEAR OF AGE.

CAUSE OF DEATH.	Under 1 week	1-2 weeks	2-3 weeks	3-4 weeks	Total under 4 weeks	4 weeks and under 3 months.	3 months and under 6 months.	6 months and under 9 months.	9 months and under 12 months.	Total Deaths under 1 year
All causes — Certified ..	76	27	15	13	131	73	56	55	44	359
All causes — Uncertified ..	...	...	...	...	...	...	...	...	...	...
Influenza	...	...	...	...	...	1	4	1	3	9
Cerebro-spinal Fever ...	...	...	...	...	...	...	...	1	...	1
Measles	...	...	...	...	...	...	...	2	2	4
Scarlet Fever	...	...	...	...	...	...	...	...	...	...
Whooping Cough	...	...	...	...	...	2	8	7	7	24
Diphtheria and Croup ...	...	...	...	...	...	...	...	...	...	...
Erysipelas	...	...	...	...	...	...	...	...	...	...
Tuberculous Meningitis ...	...	...	...	...	...	1	...	1	1	3
Abdominal Tuberculosis ...	...	...	...	...	...	...	...	...	1	1
Other Tuberculous Diseases ...	...	...	...	...	...	...	...	...	...	...
Meningitis (not Tuberculous)	...	...	...	...	...	1	1	...	...	2
Convulsions	3	4	...	1	8	6	2	1	...	17
Laryngitis	...	...	...	...	...	...	1	...	...	1
Bronchitis	1	1	...	...	2	13	8	10	8	41
Pneumonia (all forms) ...	...	...	...	...	...	9	17	20	17	63
Diarrhœa	...	...	...	...	...	...	...	...	...	...
Enteritis	...	...	...	2	2	10	2	4	4	22
Gastritis	...	...	...	...	...	4	2	1	...	7
Syphilis	1	...	1	1	3	5	2	...	...	10
Rickets	...	...	...	...	...	...	...	...	...	...
Suffocation, overlying ...	...	1	...	...	1	...	1	...	...	2
Injury at birth	3	...	...	...	3	...	...	...	...	3
Atelectasis	...	...	1	...	1	...	...	...	...	1
Congenital Malformations ...	9	4	...	1	14	5	...	2	...	21
Premature Birth	45	10	10	5	70	6	1	1	...	78
Atrophy, Debility and Marasmus	9	4	1	1	15	7	3	1	...	26
Other Causes	5	3	2	2	12	3	4	3	1	23
Totals	76	27	15	13	131	73	56	55	44	359

Nett Births in the year — legitimate 4,259; illegitimate 142

Nett Deaths in the year of — legitimate infants 335; illegitimate infants 24

TABLE IV.

Cases of Infectious Disease Notified, 1922.

Notifiable Diseases.	Number of Cases Notified.									Total Cases Notified in each Locality.			Total Cases Removed to Hospital.
	At all Ages.	At Ages—Years.								East Cardiff Regis. Sub-Dist.	Central Cardiff Regis. Sub-Dist.	West Cardiff Regis. Sub-Dist.	
		Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 45.	45 to 65.	65 and upwards.					
Small Pox	...	...	...	...	...	...	...	...		...	...	...	...
Diphtheria, including Membranous Croup ...	247	1	68	137	24	15	1	1		112	80	55	181
Erysipelas	46	...	...	6	3	10	21	6		16	15	15	...
Scarlet Fever	363	3	84	221	37	17	1	...		125	88	150	313
Enteric Fever	8	...	...	3	2	2	1	...		4	...	4	5
Puerperal Fever	20	...	...	...	4	16	...	...		3	8	9	...
Cerebro-Spinal Fever	2	1	...	...	...	1	...	...		...	1	1	2
Ophthalmia Neonatorum	64	63	...	1	...	...	...	...		21	26	17	...
Poliomyelitis	...	...	...	...	...	...	...	...		...	...	...	...
Encephalitis Lethargica	1	...	...	...	1	...	...	...		...	...	1	...
Influenzal Pneumonia, etc.	226	12	30	20	37	72	42	13		99	56	71	...
Malaria	15	...	...	...	8	5	2	...		2	10	3	...
Pulmonary Tuberculosis	387	...	5	29	111	168	73	1		99	156	132	...
Other Forms of Tuberculosis	96	4	14	31	25	16	3	3		27	45	24	...
Totals	1,475	84	201	448	252	322	144	24		508	485	482	501

TABLE V.—Analysis of Births and Deaths in the City of Cardiff, in Registration Sub-Districts, and in Municipal Wards (as before Extension), during the year 1922.

LOCALITIES	*Population (Civil)	† Area in Acres	Persons per Acre	Births		Deaths		Deaths under 1 Year		Seven Principal Zymotic Diseases		Principal Zymotic Diseases.																Phthisis, Pulmonary Tuberculosis		Other Tuberculous Diseases.		Respiratory Diseases	
												Small-pox		Measles		Scarlet Fever		Whooping Cough		Diphtheria		Typhoid Fever		Diarrhœa							
				Number	Birth-rate	Number	Death-rate	Number	Number per 1000 Births	Number	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate
City of Cardiff ...	203,700	5,170	39·4	4,401	21·6	2,704	13·2	359	81	102	0·50	...	...	14	0·07	2	0·009	42	0·20	15	0·07	2	0·009	27	0·13	260	1·27	49	0·24	611	2·99
East Cardiff Registration District. (Roath Ward ...	20,766	750	...	472	22·7	267	12·8	35	74	11	0·52	...	...	1	0·04	1	0·04	3	0·14	2	0·09	...	...	4	0·19	17	0·81	2	0·09	51	2·45
East Cardiff Registration District. (Park Ward ...	23,949	539	...	426	17·7	286	11·9	21	49	8	0·33	...	...	...	...	...	...	6	0·25	1	0·04	...	...	1	0·04	26	1·08	6	0·25	57	2·38
East Cardiff Registration District. (Splott Ward ...	20,594	818	...	517	25·1	245	11·8	34	66	15	0·72	...	...	7	0·33	...	...	5	0·24	2	0·09	...	...	1	0·04	17	0·82	3	0·14	65	3·15
East Cardiff	65,309	2,107	30·9	1,415	21·6	798	12·2	90	64	34	0·42	...	...	8	0·12	1	0·01	14	0·21	5	0·07	...	...	6	0·09	60	0·91	11	0·16	173	2·64
Central Cardiff Registration Sub-District. (Central Ward ...	11,889	457	...	234	19·6	217	18·2	44	188	9	0·75	...	...	1	0·08	...	...	3	0·25	1	0·08	...	...	4	0·33	21	1·76	4	0·33	57	4·79
Central Cardiff Registration Sub-District. (South Ward ...	11,495	163	...	257	22·3	165	14·3	13	51	2	0·17	...	...	...	...	...	...	...	...	...	...	...	...	2	0·17	23	2·00	4	0·34	24	2·08
Central Cardiff Registration Sub-District. (Cathays Ward ...	24,748	382	...	512	20·7	313	12·8	28	55	11	0·44	...	...	1	0·04	...	...	2	0·08	3	0·12	...	...	5	0·20	40	1·61	8	0·32	63	2·54
Central Cardiff Registration Sub-District. (Adamsdown Ward	14,668	172	...	302	20·5	229	15·6	33	109	10	0·68	...	...	...	...	1	0·06	5	0·34	2	0·13	...	...	2	0·13	16	1·09	4	0·27	59	4·02
Central Cardiff ...	62,800	1,174	53·4	1,305	20·7	924	14·7	118	90	32	0·50	...	...	2	0·03	1	0·01	10	0·15	6	0·09	...	...	13	0·20	100	1·59	20	0·31	203	3·23
West Cardiff Registration District. (Riverside Ward...	18,432	298	...	367	19·9	341	18·5	30	82	11	0·59	...	...	...	...	...	...	7	0·37	1	0·05	1	0·05	2	0·10	11	0·59	5	0·27	58	3·14
West Cardiff Registration District. (Canton Ward ...	27,759	448	...	600	21·6	311	11·2	48	80	12	0·43	...	...	1	0·03	...	...	5	0·18	1	0·03	...	...	5	0·18	27	0·97	2	0·07	74	2·66
West Cardiff Registration District. (Grangetown Ward	25,962	1,143	...	714	27·5	330	12·7	73	102	12	0·46	...	...	3	0·11	...	...	6	0·23	2	0·07	...	...	1	0·03	31	1·19	7	0·26	83	3·01
West Cardiff	72,153	1,889	38·1	1,681	23·2	982	13·6	151	90	35	0·48	...	...	4	0·05	...	...	18	0·24	4	0·05	1	0·01	8	0·11	69	0·95	14	0·19	215	2·97
Institutions	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	31	...	4	...	20	...

* The civil population of the whole City is that adjusted by the Registrar-General, and the populations of the Registration Sub-districts and of the Municipal Wards those enumerated at the Census of 1921.

† Excluding inland water, docks, and foreshore.

APPENDIX V.

STATISTICS OF ADDED AREA.

TABLE I.—Births, Legitimate and Illegitimate, in Parishes from 9th November, 1922.

Parish	Legitimate		Illegitimate		Total		Grand Totals
	M.	F.	M.	F.	M.	F.	
Caerau	...	...	...	...	...	...	...
Llandaff	27	27	3	1	30	28	58
Llanedarne	...	...	...	...	...	...	...
Llanishen	1	5	...	...	1	5	6
Michaelston-super-Ely ...	...	...	...	...	...	...	...
St. Fagans	...	...	...	...	...	...	...
Whitchurch	6	6	...	...	6	6	12
Totals ...	34	38	3	1	37	39	76

TABLE II.

Causes of and Ages at Death from 9th November, 1922.

Causes of Death.	Nett Deaths at the subjoined ages of "Residents" whether occurring within or without the District.									Total Deaths whether of "Residents" or "Non-Residents" in Institutions in the District.
	ALL AGES	Under 1 year.	1 and under 2 years.	2 and under 5 years.	5 and under 15 years.	15 and under 25 years.	25 and under 45 years.	45 and under 65 years.	65 and upwards.	
1	2	3	4	5	6	7	8	9	10	11
All causes { Certified ...	28	7	1	...	1	1	3	4	11	5
All causes { Uncertified	...	...	...	...	...	...	...	...	...	...
Enteric Fever	...	...	...	...	...	...	...	...	...	...
Small-pox	...	...	...	...	...	...	...	...	...	...
Measles	...	...	...	...	...	...	...	...	...	...
Scarlet Fever	...	...	...	...	...	...	...	...	...	...
Whooping Cough ...	...	...	...	...	...	...	...	...	...	...
Diphtheria and Croup ...	1	...	...	...	1	...	...	...	...	...
Influenza	2	...	...	...	...	...	...	1	1	...
Erysipelas	...	...	...	...	...	...	...	...	...	...
Phthisis (Pulmonary Tuberculosis) ...	2	...	...	...	...	1	1	...	...	1
Tuberculous Meningitis ...	...	...	...	...	...	...	...	...	...	...
Other Tuberculous Diseases	...	...	...	...	...	...	...	...	...	...
Cancer, malignant disease	3	...	...	...	...	...	...	...	3	2
Rheumatic Fever ...	...	...	...	...	...	...	...	...	...	...
Meningitis	...	...	...	...	...	...	...	...	...	...
Organic Heart Disease ...	2	...	...	...	...	...	...	1	1	...
Bronchitis	...	...	...	...	...	...	...	...	...	...
Pneumonia (all forms) ...	4	4	...	...	...	...	...	...	...	...
Other diseases of Respiratory Organs ...	2	...	1	...	...	...	1	...	...	...
Diarrhœa and Enteritis ...	...	...	...	...	...	...	...	...	...	...
Appendicitis and Typhlitis	...	...	...	...	...	...	...	...	...	...
Cirrhosis of Liver ...	...	...	...	...	...	...	...	...	...	...
Alcoholism	...	...	...	...	...	...	...	...	...	...
Nephritis and Bright's Disease	1	...	...	...	...	...	...	...	1	...
Puerperal Fever ...	...	...	...	...	...	...	...	...	...	...
Other accidents and diseases of Pregnancy and Parturition ...	...	...	...	...	...	...	...	...	...	...
Congenital Debility and Malformation, including Premature Birth ...	1	1	...	...	...	...	...	...	...	...
Violent Deaths, excluding Suicide	4	2	...	...	...	...	...	1	1	...
Suicide	1	...	...	...	...	...	...	...	1	...
Other Defined Diseases ...	5	...	...	...	...	...	1	1	3	2
Diseases ill-defined or unknown	...	...	...	...	...	...	...	...	...	...
Totals ...	28	7	1	...	1	1	3	4	11	5
Sub-entries (included in above figures)—										
Cerebro-spinal Meningitis	...	...	...	...	...	...	...	...	...	...
Broncho-Pneumonia ...	1	1	...	...	...	...	...	...	...	...
Encephalitis Lethargica	...	...	...	...	...	...	...	...	...	...

TABLE III.

Cases of Infectious Disease Notified from 9th November, 1922.

Notifiable Diseases.	Number of Cases Notified.								Total Cases Removed to Hospital.
	At all Ages.	At Ages—Years.							
		Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 45.	45 to 65.	65 and upwards.	
Small Pox	...	...	...	...	...	...	...	...	...
Diphtheria, including Membranous Croup ...	9	...	3	5	...	1	...	...	4
Erysipelas	1	...	...	...	...	1	...	...	...
Scarlet Fever...	5	...	1	4	...	...	...	...	3
Enteric Fever	...	...	...	...	...	...	...	...	...
Puerperal Fever	1	...	...	...	...	1	...	...	...
Cerebro-Spinal Fever	...	...	...	...	...	...	...	...	...
Ophthalmia Neonatorum	...	...	...	...	...	...	...	...	...
Poliomyelitis	...	...	...	...	...	...	...	...	...
Encephalitis Lethargica	...	...	...	...	...	...	...	...	...
Influenzal Pneumonia, etc.	2	...	...	...	...	2	...	...	...
Malaria	...	...	...	...	...	...	...	...	...
Pulmonary Tuberculosis	...	...	...	...	...	3	...	...	...
Other Forms of Tuberculosis	...	...	...	...	...	...	...	...	...
Totals ...	18	...	4	9	...	8	...	...	7

APPENDIX VI.

STATISTICS OF METEOROLOGICAL OBSERVATIONS TAKEN AT PENYLAN, CARDIFF.

TABLE I.

BAROMETRIC PRESSURE AND RELATIVE HUMIDITY.

1922.	Attached Thermometer (Mean)	Mean Barometric Pressure*		Hygrometer*.		
		Uncorrected	Reduced to Mean Sea Level and Temp. 32° F.	Dry Bulb (Mean)	Wet Bulb (Mean)	Mean Relative Humidity.
	°F.	Inches	Inches	°F.	°F.	%
January	44	29·595	29·812	39·9	38·6	88
February	43	29·660	29·880	40·6	38·7	84
March	45	29·687	29·901	40·6	37·7	76
April	46	29·560	29·770	42·4	39·2	76
May	57	29·944	30·121	54·6	50·5	75
June	64	29·873	30·031	56·6	52·3	73
July	61	29·756	29·920	56·2	52·9	79
August	61	29·792	29·956	56·2	53·5	82
September	59	29·827	29·999	55 1	52·4	82
October	53	29·867	30·060	46·3	44·1	84
November	46	30·017	30·230	42·9	41·2	86
December	45	29·622	29·834	43·4	41·7	86
Means	52	29·765	29·959	47·9	45·2	81

* From observations at 9 a.m. and 9 p.m.

TABLE II.

TEMPERATURE.

1922.	Absolute Maximum	Absolute Minimum	Mean of Maximum	Mean of Minimum	Mean Temperature	Difference from Average (32 years)
	° F.	° F.	° F.	°F.	°F.	°F.
January	54	23	45·7	35·2	40·5	+0·9
February	54	25	46·5	36·3	41·2	+1·1
March	54	28	46·8	35·8	41·5	—0·7
April	58	27	50·0	36·2	43·1	—3·2
May	81	36	64·0	46·7	55·2	+2·4
June	81	42	65·5	49·2	57·3	+0·1
July	70	46	63·1	51·0	57·0	+3·7
August	67	42	62·3	50·6	56·4	—3·9
September	71	41	61·6	48·8	55·1	—1·2
October	63	30	53·4	41·6	47·5	—2·8
November...	54	28	49·1	37·8	43·4	—0·8
December	53	34	47·8	39·6	43·7	+2·8
	Highest 81	Lowest 23	Mean 54·7	Mean 42·4	Mean 48·5	—1·6

TABLE III.

Terrestrial Radiation, Underground Temperature, Solar Radiation and Sunshine.

1922.	Temperatures.				Bright Sunshine. Total Duration	Bright Sunshine. Difference from Average (14 years)
	Grass Minimum (mean)	Underground (mean) 1ft.	Underground (mean) 4ft.	Solar Maximum (mean)		
	°F.	°F.	°F.	°F.	hours	hours
January	30·7	40·3	45·6	...	51·1	— ·7
February	32·0	40·3	43·5	...	73·4	— 2·7
March	30·5	42·2	44·7	...	115·1	+ 5·9
April	28·2	43·3	44·2	...	186·0	+ 7·6
May	42·9	55·1	47·9	123	257·5	+40·0
June	45·4	61·5	56·6	122	245·3	+26·5
July	48·5	59·5	56·7	118	184·6	—29·4
August	48·0	59·5	57·8	113	125·6	—64·0
September	46·3	57·1	56·7	108	142·7	— 3·6
October	37·7	50·0	54·4	96	136·8	+31·0
November	34·2	42·8	48·4	76	66·7	+ 3·2
December	36·3	42·3	46·3	68	38·2	—12·5
	38·3 (mean)	49·5 (mean)	50·2 (mean)	103 (mean—8 mos.)	1,623·0*	+ 1·3

* = 36% of possible duration. Daily average, 4·4 hours.

TABLE IV.

Rainfall.

1922.	Total Fall.	Difference from Average (32 years)	Greatest Fall in 24 hrs.* Amount	Greatest Fall in 24 hrs.* Day	Number of Rain-days (0·01 inches or more).
	Inches	Inches	Inches		
January	4·09	+ ·38	·73	15th	22
February	4·59	+1·74	·78	27th	17
March	3·87	+ ·58	·85	31st	15
April	3·01	+ ·36	·60	25th	16
May	1·51	— ·94	·45	16th	12
June	1·29	—1·50	·36	25th	12
July	4·59	+1·90	1·11	5th	19
August	4·14	...	·60	6th	18
September	3·45	+ ·57	1·10	19th	10
October	1·49	—2·32	·71	31st	6
November	2·13	—1·28	·86	5th	13
December	7·01	+2·38	1·53	19th	18
	41·17	+1·88	Greatest for Year—1·53 ins. on 19th Dec.		178

Measured at 9 a.m. each day for the preceding 24 hours. * 24 hours ended 9 a.m. next day.